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No. 245

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7 January 1983

# CHINA REPORT

## AGRICULTURE

No. 245

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## NATIONAL

### I. GENERAL INFORMATION

#### USE OF FOREIGN RICE HYBRIDS DETAILED

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER]  
in Chinese No 10, 17 Oct 82 pp 5-6

[Article by Yuan Shichuan [5913 0013 0278], Crop Variety Resources Institute, Chinese Academy of Agricultural Sciences: "Role of Introduction of Superior Foreign Rice Varieties in Production and Scientific Research." All Japanese and Korean rice variety names have been rendered in Chinese.]

[Text] During the past 10 years, this institute's superior foreign varieties research office has introduced into China more than 6,000 specimens of paddy rice germ plasm resources from more than 40 countries, regions and international organizations as a result of foreign exchanges of germ plasm. After accounting for some duplications, the newly introduced germ plasms numbered somewhat more than 4,000. After strict quarantining, inventorying and recording, these introduced materials were distributed in a planned purposeful way to agricultural research institutes in the country's major northern and southern rice growing areas for test planting. The institute has cooperated with units concerned in the Guangdong Provincial Academy of Agricultural Sciences, the Jiangsu Provincial Academy of Agricultural Sciences, and the Jiangpu County Agricultural Institute in joint appraisal of the traits and characteristics of introduced foreign rice resources, selecting a group of superior varieties in direct promotion for use in production. In addition, they verified that groups of rice germ plasms had certain superior traits and used them indirectly as parent pairs in breeding research. Statistics show direct promotion for use of more than 30 xian and geng rice varieties introduced into the country during the past 10 years. Most were xian rice varieties of the IR system brought in from the International Rice Institute, and geng varieties introduced from Japan. Second were xian varieties brought in from Sri Lanka, and geng varieties brought in from Korea and the United States. Xian varieties now being promoted over fairly wide areas in production include IR 8, IR 24 (IR 661), IR 26, IR 28, IR 29, IR 30, IR 36, IR 1529-680-3, IR 2061, IR 2061-464-2-4-5, IR 2061-465-1-5-5, IR 1561-228-3-3, and Sri Lanka variety BG 90-2. Geng varieties being grown on a fairly large area or that have worked out fairly well include Japances varieties Fengjin, Yuefu, Shishou, Xifeng, Xiuling, Qingjin, Gongzhiqing, Qiuguang, and Chusheng, plus varieties introduced in the past but which have been re-introduced several times in recent years for promotion

in production, namely Liming, Songqian, Ribenqing, Yueluzaosheng, Xiayi, Tengnian, Xiabei, Tengban No 5, Tengban 66, Caodi, Shanfashi, and Manyuenuo; Xiongji No 9 and Xiannan No 10 from Korea, plus medium grain size variety Gunson No 456 from the United States. These varieties have increased yields by from 10 to 20 percent in production.

Short stem, high yield variety IR 8, which the International Rice Institute bred successfully in 1966, was introduced into China in successive years from 1968 to 1973, and in test plantings in South China's rice-growing provinces it demonstrated short stems, tolerance of fertilizer, strong tillering, wide adaptability and high yields. Its promotion to cultivation over wide areas began during the early 1970's, and it developed very rapidly. By 1978 it had been promoted over an area of 8.5 million mu in 13 provinces (or regions) and municipalities in south China. Grown as a double crop early rice, it produced regular yields of 1,000 jin per mu. In Hunan and Hubei provinces, when grown in a cropping system of green manure--rice, or rapeseed--rice, it produced yields of 1,100 jin per mu. In many places yields of more than 1,300 jin per mu were typical. However, since that variety had a long growing period and rather poor resistance to disease, it was gradually replaced during the last part of the 1970's by a selected strain of IR 8 and by Chinese produced hybrids.

IR 24, which the International Rice Institute successfully bred in 1971, was introduced into China in 1972. It was test planted in Guangdong Province, where it demonstrated short stems, tolerance of fertilizer, strong tillering, resistance to lodging, a rice quality superior to that of IR 8, fairly strong disease resistance, and yields no less than those of IR 8. It was very rapidly promoted for use in rice growing regions of South China. It was promoted over a fairly large area on Hainan Island, the Leizhou Peninsula, and in Foshan Prefecture, Guangdong Province, the area of its promotion in production amounting to 1.5 million mu. IR 1529-580-3 introduced in 1974 had all the characteristics of IR 24 plus tolerance of heat, resistance to bacterial blight and rice blast, broad adaptability, and strong regenerative powers. It was promoted over a fairly wide area on Hainan Island in Guangdong Province, and it was also promoted for use in the rice growing provinces of Guangxi, Hunan, and Hubei, the area of its widest spread being almost 1 million mu. IR 26, and IR 2061-464-2-4-5 varieties, and the Gaodai line introduced in 1974 are noted highly resistant rices, particularly in their resistance to diseases and insect pests. Though yields were less than from IR 8, a fairly good crop could be harvested in areas fairly severely infested with rice blast, bacterial blight, brown leafhoppers, and leafhoppers; consequently they were well received.

For the rice growing areas of North China, Fengjin variety, which had been successfully bred in Japan in 1969, was introduced in consecutive years from 1970 to 1972. It was first successfully test grown at the Xinguang Province Brigade in Shuyuan Commune, Yingkou County, Liaoning Province where it demonstrated good agroproperties, a high fruiting rate, broad adaptability, superb rice quality, and high yields. It was promoted to cultivation throughout the province very rapidly, becoming the dominant variety. It has now spread to a more than 3 million mu area in Liaoning, Jilin, Beijing,

and Tianjin. Intermediate maturing late spring rice variety, Yuefu, from Japan produces high yields of superb quality rice and has been well received. It has been widely promoted for use in Beijing and in Hanzhong Prefecture in Hebei Province. Early maturing Japanese variety Qiuling, which is suitable for planting following a wheat crop, matures early, produces high yields, has a high fruiting rate, superb rice quality, and is resistant to rice blast and bacterial blight. It has been promoted in Beijing, and it is also used in Liaoning province as a fine variety in a rapeseed-rice cropping system. Japanese intermediate ripening varieties Qiuguang and Chusheng, which were introduced in 1976, showed evenness of growth, high spiking rate, plump grains, overall fine traits, and high yield. They are now being promoted for use in Liaoning and Beijing. Late ripening Japanese variety Guzuqing exhibited high yields and disease resistance when test grown in the rice growing region of southern Jiangsu Province. It is being gradually spread to cultivation in rice growing areas along the Chang Jiang in southern Jiangsu.

In addition to direct promotion of superior foreign rice varieties, use of introduced varieties in the breeding of hybrids is widespread and great results have been achieved, particularly in research on geng hybrids. In 1972, after China had successfully bred male sterile and sterile free lines of geng type rice, agricultural research personnel in Hunan, Jiangxi, and Guangxi used them in a large amount of test crossings with rice germ plasms brought in from Southeast Asia. In 1973, they discovered among these rice varieties imported from abroad a superior restorer line with strong heterosis, thereby successfully obtaining three matched lines for the first time in China. Today very many materials introduced from abroad are being used directly as restorer lines. Of more than 400 restorer lines appraised during 1979 and 1980 by the Hunan Provincial Rice Institute, more than 150 foreign varieties were used directly as restorer lines. Materials imported from abroad are also widely used in rice breeding research, and a very large number of superior varieties have been bred for use in production. In Guangdong and Guangxi provinces, for example, Kejiexuan Nos 1, 2, and 17, and Ke 1, Ke 2, and Ke 3 were successfully bred from segregated individual plants of IR 8, and these have been promoted in production over an area of more than 1 million mu.

Using variated individual plants of IR 1661, the Hubei Academy of Agricultural Sciences successfully bred "525" for gradual replacement of IR 8. In the field of radiation breeding, the Zhejiang Academy of Agricultural Sciences irradiated IR 8 with cobalt 50 for the variable breeding of intermediate ripening early xian variety, Yuanfengzao, which was promoted to cultivate over a more than 1 million mu area of Zhejiang Province in 1976. The Hunan Academy of Agricultural Sciences irradiated IR 20 and IR 8 materials to breed Wanfu 23 and Wanfu 33 varieties, which have been promoted over wide areas in Hunan. In the breeding of hybrids, widespread use has been made of germ plasms from abroad as hybrid parent stock. The Hunan Provincial Academy of Agricultural Sciences has achieved very good results in this regard. It crossed IR 8 with Xiangzaizao No 4 to breed Xiangzaizao No 9, which has been spread to more than 11 million mu, becoming the dominant variety used in



Hunan Province. In Jiangxi Province, the crossing of 1696 with IR 8 produced the late xian hybrid, Dongting, which had spread to an area of more than 1 million mu in 1978. In another case, 91 late xian was crossed with IR 22 to breed a variety finalized as "91228" in 1975. This has also been used in production over a wide area. Research units in other provinces, municipalities, and autonomous regions also made wide use of germ plasm resources from abroad as parents for the breeding of hybrids.

By way of making rice plasm germ resources from abroad better serve China's agricultural research, we have applied to some of the rice germ plasms introduced from abroad data about germ plasm traits that our office has summarized from appraisals of test plantings over a period of several years plus pertinent foreign intelligence data. We have classified some germ plasms possessing certain superior traits, including large grain varieties, cold-tolerant varieties, early ripening varieties, disease-resistant varieties (such as varieties with multiple resistances, high resistance to bacterial blight, high resistance to rice blast, as well as varieties with resistance to other major diseases), and insect-resistant varieties (such as resistance to brown leafhoppers, resistance to leafhoppers, and such major insect pests). In addition, there are types that tolerate salinity and alkalinity, that make good use of light, and whose protein content is fairly high. We have provided reference materials on these materials to research units concerned in individual provinces. The institute also established test planting and appraisal bases for rice varieties imported from abroad at the Guangdong Provincial Academy of Agricultura Sciences and at the Jaingsu Provincial Academy of Agricultural Sciences. These bases do both appraisal and breeding work so as to provide major research units throughout the country with the seeds they need for research.

During the past 2 years exchange of germ plasms have become increasingly numerous as a result of the participation by several of the country's southern provinces (or regions) and municipalities in various research projects as part of international rice experiment plans, plus cooperation between the Chinese Academy of Agricultural Sciences and the International Rice Research Institute in the exchange of large amounts of rice germ plasm. During 1980 and 1981 alone, almost 3,000 specimens of paddy rice material were brought in from the International Rice Institute alone. As a result of experiments with these materials by test planting units, another group of fairly high yield superior varieties (or lines) with prospects for direct use, plus a group of rice germ plasms that are insect-resistant, disease-resistant, cold-tolerant, and tolerant of alkalinity and salinity have been discovered. These varieties (and lines) that have made a good showing are now undergoing further tests by research units that have conducted successful experiments in preparation for their promotion for use.

To summarize the foregoing, the rice variety materials that China has introduced from abroad during the past 10 years through an exchange of rice germ plasms, have played a positive role in the country's agricultural production and breeding research. In future we should continue this work. While fully exploring and using our own country's abundant rice variety

resources, we should strengthen relations with research units concerned in rice producing countries, enter into scientific and technical interchanges, exchange germ plasms, and bring in more superior foreign varieties and stock materials for breeding to serve China's agricultural science. At the same time, we must diligently test and appraise varieties that are introduced, so that these introduced materials will play a better and greater role more rapidly in China.

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CSO: 4007/33

# STATE FARM, LAND RECLAMATION ACHIEVEMENTS OUTLINED

Beijing ZHONGGUO NONGKEN [State Farms and Land Reclamation in China] in Chinese No 9, 24 Sep 82 pp 2-3

[Article: "Summarize Experiences; Add to Achievements; and Advance on the Crest of Victory"]

[Text] As we celebrate the convening of the 12th Party Central Committee and study and carry out the spirit of the 12th Party Central Committee, in looking back at the accomplishments we have made in state farm and land reclamation enterprises since the Third Plenary Session of the 11th Party Central Committee, and in summarizing the experiences of the past several years, we feel elated. In looking forward to the bright prospects for building the four modernizations, we are filled with greater confidence.

The period since the Third Plenary Session of the 11th Party Central Committee has been one in which great changes have taken place in our state farm and land reclamation enterprises. During the past more than 3 years, we have followed the correct path of running enterprises in accordance with natural laws and economic laws as our fundamental point of departure for improving economic effectiveness, which has achieved heartening results. Now let us look at these great changes in terms of several major economic criteria. Gross output value of industry and agriculture in state farm and land reclamation enterprises for the country as a whole, calculated in terms of 1970 constant prices, increased from 7.3 billion yuan in 1978 to 8.6 billion yuan, rising 17.6 percent in the course of 3 years. In 1978 output of grain and beans totaled 12.5 billion jin. In 1980 it was 15.3 billion jin, an increase of 21.9 percent. In 1981 the Heilongjiang state farm and land reclamation area sustained severe waterlogging, which greatly reduced output, yet grain and bean output from state farm and land reclamation enterprises for the country as a whole was still close to the 1978 levels. An important indicator of the increase in economic effectiveness of enterprises is how much useful products they provide that are needed by the people and society. In 1978, gross output value of products that state farm and land reclamation enterprises sold to the state was 3 billion yuan; in 1981 it increased to 4.45 billion yuan, a 48.3 percent increase. Enterprise profits and losses capsule economic effectiveness. During the past 3 years, throughout the country state farm and land reclamation enterprises have reversed the situation of serious losses that occurred year after year during the 10 years of turmoil. Losses during the 11-year period from 1967 to 1977 totaled 3.6 billion yuan. The period between

1979 and 1981 brought 3 consecutive years of profits totaling almost 1.3 billion yuan. What a remarkable change!

Resolute implementation of the program of national economic readjustment has been a major element in the great increase in economic effectiveness of state farm and land reclamation enterprises. For many years in the past, numerous farms carried on single crop agriculture in a onesided emphasis on grain production, the proportion of economic diversification being not very large. This resulted in an irrational economic structure, which seriously impaired economic effectiveness. Since 1979, under guidance of the program for national economic readjustment, all state farm and land reclamation areas and all state farms have readjusted their economic structures. First has been energetic development of state farm and land reclamation industry to make the output value of state farm and land reclamation half that of the output value of industry and agriculture combined. This has played a major role in raising economic effectiveness and turning losses into increased profits. It has simultaneously resulted in readjustment of the structure of the farming industry through the adaptation of general methods to local situations. While assuring steady growth in grain output, all state farm and land reclamation areas, and all farms have developed cash crops of high economic effectiveness. State farm and land reclamation areas in Heilongjiang, Xinjiang, Liaoning, and Hubei provinces have increased the building of commodity grain bases for tremendous increases in both total grain output and the amount of commodity grain provided. Farms have increased the area planted to cash crops by a total of more than 1 million mu, outputs of cash crops such as cotton, oil-bearing crops, sugar, and others thereby increasing many times over. In the Xinjiang reclamation area, total grain output has increased from 1.73 billion jin to 1.85 billion jin, and meanwhile the area planted to cotton has increased from 625,000 mu to 1.31 million mu, total cotton output increasing from 389,000 dan to 1.05 million dan, a 1.7 fold increase. This alone increased income by more than 100 million yuan annually. Great achievements have also been made in the growing of tropical cash crops in Guangdong, Yunnan, Guangxi, and Fujian provinces. State-owned farms in Guangdong and Yunnan provinces, which are major rubber producing areas, produced 93,000 tons of dry rubber in 1978; in 1981 output increased to 15,000 tons, a more than 20 percent increase.

State farm institution of integrated agricultural, industrial, and commercial operations, and the operation of integrated agricultural, industrial, and commercial enterprises have played a major role in enlivening the state farm and land reclamation economy and in raising economic effectiveness. During the past 3 years the state farm and land reclamation system has trial operated 270 integrated enterprises, 1,218 farms or 58 percent of the total number participating in integrated enterprises. Integrated agricultural, industrial, and commercial operations have advanced development of production, have provided for surplus labor, have enlivened markets, and have increased both enterprise profits and state revenues.

During the past 3 years, while practicing assignment of sole fiscal responsibility, state farm and land reclamation enterprises have promoted various forms of economic responsibility systems, which have vigorously carried into effect the principle of socialist remuneration of labor of to each according to work, and have stirred the enthusiasm of the broad masses of staff and workers to play a major role in promoting development of production and turning losses

into increased profits. Following promotion of economic responsibility systems, labor efficiency steadily increased. The labor productivity rate for all personnel in the state farm and land reclamation system increased from 1,445 yuan in 1978 to 1,696 yuan in 1981, a 17.4 percent increase. As production developed and economic benefits increased, staff and worker incomes and standards of living rose considerably.

Despite severe natural disasters in a majority of provinces and regions during 1982, thanks to the efforts of the broad masses of state farm and land reclamation staff and workers, good results were obtained in every field of production during the first half of the year. Farms in quite a few provinces and regions harvested bumper summer grain crops. In Jiangsu Province, the summer grain harvested for all farms was 5.6 percent greater than during the 1981 bumper harvester year, and rapeseed output was more than double that of 1981. Economic diversification on state farms everywhere in the country continues to develop. The area planted to cash crops continues to increase. The area planted to cotton is 17.2 percent greater than in 1981, including a 36.4 percent increase in Xinjiang state farm and land reclamation areas. Considerable development has taken place in the livestock industry, the raising of milk cows developing particularly fast. On farms in seven major cities, including Beijing, Tianjin, Shanghai, and Guangzhou, the number of milk cows has increased by 7.7 percent. Milk output for the first half of the year was 210 million jin, 10.2 percent more than during the same period in 1981. State farm and land reclamation industries have devoted themselves to making full use of production potential in existing enterprises, tapping it, restructuring, and improving. For the first half of 1982 industrial output value was 2.09 billion, 7.4 percent more than in 1981.

While we are summarizing experiences and affirming achievements, we should also realize that what we have accomplished is only a beginning, and still a long way from meeting the demands of the party and the people. Looked at in overall terms, economic effectiveness of state farm and land reclamation enterprises is not high. Quite a few enterprises in every province and region do not provide many goods, and they run at a loss. This situation must be reversed urgently. Let us diligently study and carry out the spirit of the 12th Party Central Committee, and victoriously progress in the direction pointed out by the 12th Party Central Committee to make new contributions to building the socialist four modernizations.

#### Improved Economic Effectiveness of State Farm and Land Reclamation Enterprises Nationally Over the Past 3 Years

- (a) Units
- (b) 3 Year Increase
- (c) 3 Year Average
- (d) Amount
- (e) Percent Increase %
- (f) Gross Output Value of Industry and Agriculture
- (g) 1. Output Value of Agriculture
- (h) 2. Output Value of Industry
- (i) Total Output of Grain and Beans
- (j) Total Output of Cotton

- (k) Total Output of Dry Rubber
- (l) Total Output of Oil-bearing Crops
- (m) Total Output of Tea
- (n) Total Sales to the State of Agricultural Products
- (o) Sales to the State of Grain and Beans
- (p) Sales to the State of Cotton
- (q) Sales to the State of Oil-bearing Crops
- (r) Labor Productivity Rate of All Personnel
- (s) Profit and Loss Figures
- (t) 100 Million Yuan
- (u) 100 Million Jin
- (v) 10,000 dan
- (w) 10,000 tons
- (x) Yuan
- (y) 10,000 yuan

Note: 1. Figured at 1970 constant prices.  
2. Output value of rubber processing was a part of industrial output value up until 1979. After 1980, it was carried as output value of agriculture.

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PRC FUEL CORPORATION DISCUSSES FARM USE OF FUELS

Beijing NONGYE JIXIE [FARM MACHINERY] in Chinese, No 7, 1982, p 3

["Responsible Comrades of the China Fuel Company of the Ministry of Commerce Answer Reporters' Questions"]

[Text] Many readers have written to express concern about "an increase in machinery and a reduction in fuel" and the overdemand for diesel fuel. For this reason, we visited the responsible comrades of the China Fuel Company. They welcomed us warmly and conscientiously answered our questions. We thank them. To clarify the supply and consumption situation, we have published an excerpt of the interview in the following.

Question: What is the present situation in the supply of petroleum in our nation? Is it possible for the shortage to ease.

Answer: For a long time, the supply of petroleum in our nation has been good. It has satisfied the needs for industrial and agricultural production and daily use. But during the past 2 years, because of a shortage of petroleum reserves, the output of crude oil can only be maintained at about 100 million tons. The amount of oil products supplied to the domestic market, especially diesel fuel, has continued to decrease during the past 2 years. The amount of diesel fuel last year showed a drop of 4 percent from the year before last. This year, it will drop by more than 10 percent from last year. But agricultural machinery has increased relatively quickly, a growth of 10 to 12 percent a year.

Because the supply of diesel oil has dropped, and the production of fuel consuming machinery has increased rather quickly, there seems to be a greater shortage in the market. Since the production of petroleum in our nation during the next few years will not increase on a large scale, the market supply of petroleum will not visibly ease up. In the agricultural use of fuel, we must insist on implementing the supply principles in view of the gradual reduction in the supply of diesel oil, suppress and stop the supply of fuel for irrational use, strengthen control of fuel oil, and guarantee major planting needs in farmland.

Question: What method is used to distribute fuel oil in our nation at present?

Answer: At present, our nation's petroleum products are uniformly procured, uniformly distributed, and supplied in quotas. Each province, city and autonomous region uniformly arranges the needs for every profession and business according to the distribution plan for oil products approved by the state. The distribution plan is carried out by each level by contract. This means, the plan is contracted by each level of the province, the prefecture, the county, the ward, the commune. Each fuel consuming unit is given a fuel supply quota according to its production task (the quota is established once a year, arranged quarterly, the amount of fuel conserved is kept by the unit for its use, the extra amount of fuel used by a unit is withheld from the next quota). The purpose of implementing this method is to guarantee the basic needs in industrial and agricultural production and to use the limited amount of petroleum resources where it is most needed.

Question: What do you mean by "quotas based mainly on production task"? How is the quota for agricultural use of fuel established?

Answer: Quotas based mainly on production tasks are quotas established according to the petroleum distribution plans issued by the higher authorities and based mainly on the production tasks of the fuel consuming units in combination with the fuel consumption of the machinery and the historical levels of fuel consumption. This can limit the blind increase of machinery and reduce irrational use of fuel.

Quotas for agricultural use of fuel are based on an accounting of the operational tasks in agricultural production. For example:

For machine planting, the quotas are established according to the average advanced fuel consumption for machine planting the number of mu stipulated in the plans during the fiscal year and based on the actual number of mu machine planted last year and the consumption of fuel in combination with the natural conditions of the locality.

For drainage and irrigation, the quotas are established according to the average advanced fuel consumption required for the area of farmland to be drained and irrigated by internal combustion machinery and the number of times of drainage and irrigation required in normal years in combination with the machinery, the power source, the water source and the soil texture.

In agricultural sideline production and processing food grain rations and feed, the quotas are established according to the average advanced amount of fuel consumed in processing agricultural sidelines products, food grain rations and feed by internal combustion machinery in the fiscal year and based on the actual amount of processing completed and the amount of fuel consumed last year.

Quotas for sowing, harvesting, plant protection and such farmland operations and field transportation are also established according to the method described above.



In transporting agricultural sideline products and materials for agricultural production, the quotas are established according to the mileage to be transported and the average advanced fuel consumption based on the amount of agricultural sideline products submitted for sale and the amount of materials for agricultural production transferred into the region over short hauls minus the amount of cargo of manpower and animals and on the actual shipments completed and the amount of fuel consumed last year.

Tractors engaged in transportation for business are not entitled to any quotas and no fuel is supplied to them.

Question: Can all the fuel oil needed in agricultural production be guaranteed?

Answer: Agriculture is the foundation of the national economy. Supplying fuel for agricultural production is an important task of the petroleum business department at each level. For many years, we have always guaranteed the supply of fuel for major operations such as drought resistance, draining flood water, machine planting, mechanized irrigation, processing of food grain rations and feed, and agricultural transportation. The reaction of the leadership at each level and the broad number of farmers has been good. During the past 2 years, because of the limits of petroleum resources, especially the gradual drop in the supply of diesel oil and the massive increase in agricultural machinery, the conflict between supply and need has become more outstanding. A serious waste of fuel by tractors and diesel machinery and such power machinery for agricultural use in farm villages exists. For example, keeping the engine running while moving, operating without a load, fuel seepage, spilling, leaking and idle burning of fuel that "leave a line of fuel on the ground when the vehicle is moving and a pool of oil on the ground when the vehicle has stopped" are common. Many localities manage fuel oil poorly. There are no procedures to follow in obtaining fuel. There is no plan for the use of fuel, there is no quota for the consumption of fuel. Concerned leaders should pay attention to such phenomena of wasting fuel oil, take measures and rapidly improve the situation.

To guarantee the basic need for fuel for agricultural production, we should begin from this year to account for fuel oil according to production tasks and according to the major operations, and implement supply quotas. In this way, we can urge the fuel consuming units to strengthen management of fuel oil and rationally utilize fuel oil. We should strictly prohibit tractors from being used for transportation as a business. If all departments are well coordinated, actually reduce and stop wastefulness, suppress irrational use of fuel, the basic need for agricultural production can be guaranteed.

Question: What are the supply channels for agricultural use of fuel (including communes and farms)?

Answer: The basic level supply and marketing cooperative is the major supplier of fuel used by communes and brigades in our nation's farm villages. A portion is supplied by the petroleum business management station.

Fuel oil used by farms (referring to state-run farms) is generally supplied by the local petroleum business department. The fuel oil used for production at the farms belonging to the Heilongjiang and Jilin agricultural reclamation system subordinate to the original Ministry of Agricultural Reclamation is allotted under special distribution orders arranged by the Ministry of Commerce and supplied by the Harbin petroleum station.

Question: How is the fuel oil for privately owned or joint family owned agricultural machinery supplied?

Answer: The basic level fuel supply units supply fuel oil for agricultural use by quotas based on the amount of work involved in major agricultural operations and according to the method of "quotas based mainly on production tasks". The production brigade or the production team is the unit receiving quotas and fuel purchasing tickets. The amount of fuel oil needed for privately owned or joint family owned farm machinery is based on the amount of work involved in the agricultural operation. The production team issues a certificate on this basis showing the amount of fuel that has to be purchased with the fuel purchasing ticket of the production team to the private or joint family operator. The operator of such machinery then goes to the fuel supply department to purchase fuel.

Question: What bad practices and illegal activities have occurred in the supply and management of fuel oil recently? How can such activities be stopped and prevented?

Answer: During the past 2 years, some petroleum business departments and fuel consuming units have not managed fuel oil strictly. The system is lax, they do not follow regulations, and cases of guards stealing fuel under their care, colluding with outsiders to steal fuel, selling fuel oil illegally obtained have occurred. In some units, the bad practices are serious. They have violated the policy of fuel supply, they whimsically issue orders for fuel supply, therefore there have been cases of selling and buying fuel oil at illegally high prices on the market and selling fuel tickets, engaging in opportunism, using fuel oil to barter for goods and such illegal activities. They have seriously disturbed the petroleum market, destroyed the policy of unified procurement, unified distribution and supply quotas. Measures should be implemented to stop such activities.

Efforts to stop such activities must begin from two aspects: on the one hand, we must investigate problems that have occurred, find the loopholes, find the cause, summarize experience, learn the lesson, establish and make sound the various management systems and strictly implement them. At the same time, we should strengthen ideological and legal education of workers so that the broad number of workers will establish the good style of performing their duties strictly, of being fair in work, obeying the law, being honest. On the other hand, if we discover cases of bribery, theft, opportunism, selling and buying oil products and oil tickets at high prices, we must have the courage to capture the offenders, have the courage to exercise control, conscientiously handle such cases, cooperate with industrial and commercial administrative management departments or the public security departments in time, handle such cases severely, exercise administrative punishment or pursue legal responsibility according to the seriousness of the offense.

9296

CSO: 4007/562

AWARD SALES POLICIES RE-EXAMINED

Beijing NONGYE JINGJI WENTI /PROBLEMS IN AGRICULTURAL ECONOMICS/ In Chinese  
No 10, 23 Oct pp 53-56

/Article by Liu Huanxiang /0491 6703 43821/ and Xie Hongli /6200 3163 4409/,  
Planning Bureau, Ministry of Commerce: "Current Problems in Award Sales of  
Chemical Fertilizer for Agricultural Sideline Products and Ideas for  
Improvements"/

/Text/ Origin of Award Sales of Chemical Fertilizer for Agricultural Products.

Award sales is another way of saying incentive sales whereby the state will sell to producers a certain amount of industrial goods in short supply when the state purchases from the producer important agricultural sideline products that bear on the national economy and the people's livelihood, and that are in short supply as a policy measure for encouraging production and sales to the state of these kinds of agricultural sideline products. Inasmuch as award sale goods are generally products produced by agriculture that are needed in the daily life of peasants but which markets are not able to supply, and since the agricultural sideline products purchased are important raw materials for light and textile industries and goods for the supply of markets (including export markets) that the state needs, award sales are a supplemental form of exchange at equal value of products of industry and agriculture.

The policy of award sales of materials for the purchase of agricultural products in China dates back to 1961. At that time the country was in a period of economic hardships and grain supplies were rather short. The lives of the broad masses of people were in a state of "low standards, and substitution of melons and vegetables for grain." The agricultural production situation was not good, and output of many economic crops and livestock products had fallen greatly, hurting supplies for light and textile industry production and for markets. In order to carry out a program of "readjustment, consolidation, filling out, and raising standards," and to hasten revival and development of agriculture and the entire national economy, the CPC Central Committee and the State Council decided on a policy of award sales for sales to the state of agricultural sideline products, so that peasants would be happy to squeeze out a little good land, fertilizer, and labor for the growing of cash crops. In 1961 the CPC Central Committee

decided to institute award sales of grain for cotton, major oil-bearing crops, flue-cured tobacco, various kinds of hemp, tea, silkworm cocoons, and sugar crops, as well as for some exported fruits, Chinese medicinal herbs, and native products. In view of the shortage of grain in 1962, the CPC Central Committee and the State Council again decided that award sales of fertilizer would replace award sales of grain with award sales of chemical fertilizer, cotton cloth, sugar, cigarettes, rubber footwear, and such industrial goods in short supply in markets in return for sales to the state of cotton, oil-bearing crops, various kinds of hemp, sugar crops and tobacco. Institution of award sale policies played a positive role in advancing revival and development of agricultural sideline products and increasing state procurement of agricultural sideline products. Comparison of 1965 with 1962 showed a 21 percent increase in grain output and a 27 percent increase in the amount of state procurement of grain; a 179.3 percent increase in cotton output, and a 215 percent increase in state procurement, a 77.7 percent increase in output of oil bearing crops and a 119 percent increase in state procurement; a 111.4 percent increase in output of jute and ambari hemp, and a 120 percent increase in state procurement; a 188 percent increase in output of flue-cured tobacco, and a 186 percent increase in state procurement; a 35 percent increase in output of tea, and a 43 percent increase in state procurement; a 77 percent increase in output of silkworm cocoons, and a 142 percent increase in state procurement.

For a period of time during the "Great Cultural Revolution," as a result of the influence of "leftist" errors, some places abolished, in varying degrees, the policy of award sales for agricultural sideline products, which had a bad effect on production and state procurement. In 1971, the CPC Central Committee again emphatically pointed out that a "sensible award sale policy must continue to be carried out." One after another, every jurisdiction then revived and formulated award sale policies for agricultural sideline products. However, as a result of a lack of nationwide uniform regulations in the size and criteria of award sales, some contradictions and problems arose between one area and another and one sector and another. In order for award sale policies to be more helpful to agricultural sideline production and procurement of agricultural sideline products, in 1973 the State Council approved and sent forward the State Statistical Commission's centralized award sales methods for agricultural sideline products. This contained explicit regulations about the principles, varieties, standards, and methods of implementation of award sales for agricultural sideline products, as well as methods for appropriating materials. Subsequently, after approval was given, increases were made one after another in allocations of chemical fertilizer allowances for grain, allowances of chemical fertilizer for edible oil, allocations of chemical fertilizer allowances for pork, allowances of chemical fertilizer for sale over quota of sesame, allowances of chemical fertilizer for various kinds of hemp, award sales of chemical fertilizer for sugar crops, allocations of chemical fertilizer allowances for Chinese herb medicines, award sales of chemical fertilizer for purchases of cowhides, award sales of chemical fertilizer for gold sales to the state by the masses, etc. In addition, from time to time, standards for award sales of chemical fertilizer for some agricultural sideline products were raised. One example was cotton for which an award sale of 70 jin of chemical fertilizer for each dan of ginned cotton

procured was set in 1973. Today the amount has risen to from 80 to 84 jin. The aforementioned various kinds of chemical fertilizer allowances are in the nature of award sales.

## 2. Fundamental Situation Today in Award Sales of Chemical Fertilizer

According to a survey done not long ago in 27 provinces, municipalities, and autonomous regions (not including the Tibetan autonomous Region and Heilongjiang Province), the basic situation today in award sales of chemical fertilizer for agricultural sideline products (not including exchange purchases and use of fertilizer for various special purposes) is as follows:

The total figure for award sales of chemical fertilizer has risen very rapidly. Incomplete statistics from the 27 provinces, municipalities, and autonomous regions show award sales of more than 8.8 million tons of chemical fertilizer in 1980. In 1981, the amount increased to more than 9.8 million tons (in 1981 actually only 26 provinces, municipalities, and autonomous regions were surveyed since Yunnan Province began to cancel award sales of chemical fertilizer in that year). This was a more than 1 million ton increase within a single year. During the past few years, award sales of chemical fertilizer have increased from the 2 and 3 million ton annual increases of the 1960's and 1970's to 6.8 to 17.8 million ton annual increases.

Award sale fertilizer is used mostly in procurement of staple agricultural goods. Take award sales in 1981 as an example when award sales of chemical fertilizer for the purchase of cotton amounted to 3 million tons or 30 percent of total award sales of chemical fertilizer. More than 1.9 million tons of chemical fertilizer, or 19 percent of the total, were used in exchange sales of grain. For the purchase of edible oil (including oil-bearing crops), 1.5 million tons of fertilizer, or 15 percent of the total were allocated for award sales. For the purchase of live hogs, beef cattle, and poultry eggs, award sales of chemical fertilizer amounted to more than 810,000 tons, or 8 percent. For the purchase of sugar crops, award sales of chemical fertilizer amounted to more than 700,000 tons, or 7 percent. For the above five commodities, award sales of chemical fertilizer totaling more than 7.9 million tons were made; this amounted to 179 percent of the total amount of award sale chemical fertilizer. In addition, 440,000 tons of award sale chemical fertilizer was used in the purchase of various kinds of hemp; 330,000 tons was used in award sales for flue-cured tobacco; and 330,000 tons was used in award sales for silkworm cocoons, totaling 3 percent. Award sales of chemical fertilizer for tea amounted to 210,000 tons or 2 percent. In addition, for some native products, fruits, vegetables, livestock products, Chinese medicinal herbs, and some mine products, award sales of chemical fertilizer totaling 900,000 tons, or 9 percent of the total, were made.

Places that provided the state with many agricultural sideline product commodities received much award sale fertilizer. Survey shows that places receiving award sales of chemical fertilizer of more than 500,000 tons were Shandong, Henan, Hubei, Jiangsu, Hebei, Anhui, Hunan, Guangdong, and Guangxi. Most of these places are the country's principal commodity bases for grain, cotton, edible oil, hemp, sugar, tobacco, and tea. Some are bases that supply

commodities for export. In 1981, the five provinces of Shandong, Hebei, Jiangsu, Hubei, and Henan provided the country with about 89 percent of its total cotton. As a result of its great bumper cotton harvests during the past 2 years, Shandong Province has annually received award sales of chemical fertilizer for agricultural products of more than 1 million tons. Another instance is the four provinces of Zhejiang, Anhui, Hunan, and Sichuan whose output (plan) of tea for export in 1981 was 62 percent of the total output (plan) of tea for export for the country as a whole. This shows that implementation of award sales policies has helped advance commodity production, and has increased procurement and sources of exports.

### 3. Several Major Problems in Award Sales of Chemical Fertilizer

More than 20 years have passed since the 1960's and the present day; as a result of the steady growth of production, circumstances have changed. Since the Third Plenary Session of the 11th Party Central Committee, in particular, the party and the state have readjusted and instituted various rural economic policies that have increased procurement prices for major agricultural products and greatly stirred the enthusiasm of the broad masses of peasants. Agricultural production has grown fairly rapidly; quantities purchased of quite a few agricultural sideline products have increased substantially, and great changes have occurred in the supply and demand situation. As a result, the award sales policies for agricultural sideline products formulated in the past, of which the policy of making award sales of fertilizer is the major one, no longer completely suit new circumstances and should be revised and readjusted.

Major problems existing in award sales of fertilizer work today are the following:

1. The sphere of award sales is extremely decentralized and too wide disparities exist in award sale standards. The state has provided for centralized award sales of fertilizer for 61 different agricultural sideline products, but incomplete statistics from the 27 provinces, municipalities, and autonomous regions show the actual number of different products to be more than 220. Between one area and another, award sales standards are also extremely decentralized with local standards being uniformly higher than the state has set. In the case of cotton, for example, the state has set an award sale of 84 jin of fertilizer for every dan of ginned cotton purchased, but in Hebei, Shanxi, and Shandong provinces, award sales of fertilizer are 100 jin, and in some parts of Sichuan Province they are 250 jin. The same situation applies to most other varieties of agricultural sideline products. For some products for which the Central Committee has set award sales of chemical fertilizer, some places make no awards. Some major producing areas make award sales of chemical fertilizer, but non-major producing areas make no award sales. Sometimes major producing areas make no award sales, while non-major producing areas do make award sales of chemical fertilizer. Such a situation of no uniform standards and differences in scope gives rise to a very great number of conflicts between areas and sectors; goods flow in a roundabout and backwards direction, which is disadvantageous for production and procurement.

2. Overlapping management, and a lack of overall balance between requirements and possibilities. Today there are more than 10 departments from the central government down to local areas that manage award sales of chemical fertilizer. In some countries, on the county level alone there are as many as 20-odd departments that manage award sales of chemical fertilizer. Agricultural production departments, commercial departments, materials departments, party and government leadership departments, and various vocational companies all manage some part of award sales of chemical fertilizer work. As a result of the decentralized management, when a certain product is in short supply, several departments (production, business, or export) vie with each other in award sales of chemical fertilizer, but once a product has developed and a shortage no longer exists, or when production is greater than sales, none of them relinquishes award sales of chemical fertilizer. As a result the size of award sales of chemical fertilizer steadily increases; standards for award sales only rise, but never fall. This causes a year by year rise in the amounts of chemical fertilizer needed for award sales. Today the amount is already greater than the actual amount of possible increase in chemical fertilizer resources that can be made available for use in award sales. This means that for quite a few products for which policies provide award sales, some award sales of fertilizer cannot be honored. This impairs both production and procurement. Looked at in national terms, fertilizer owing as a result of insufficient fertilizer resources for award sales in exchange for excess purchases of grain, cotton, and other goods amounts to more than 2 million tons. In some places the amount of award sale grain owing is even more pronounced.

3. After some products have developed and the relationship between supply and demand has undergone change, production of some things being greater than sales, chemical fertilizer award sales policies continue and stimulate pointless development. Examples are jute and ambari hemp, annual output of which was only several million dan during the early 1960's and 1970's. In order to satisfy needs for hemp raw materials in the textile industry and supply markets, annually some jute and ambari hemp had to be imported, a maximum of 1.56 million dan being imported once. Today the country's output of jute and ambari hemp is more than 20 million dan. In addition to supplying between 4 and 5 million dan for export annually, domestic supply and demand is in balance with some surplus. Flue-cured tobacco production now substantially satisfies domestic demand. There is a surplus of oil-bearing crops. Once prices had been adjusted and an additional price paid for the foregoing products, economic benefits were rather high and peasant zeal for producing them was very great. It may be seen that the policy of award sales of chemical fertilizer that were formulated in the past no longer fit new circumstances.

4. Varieties for which award sales were originally set now seem to be inequitable in very many ways. For some varieties, production has no relationship whatsoever to chemical fertilizer (cowhides, gold, wild medicinal herbs, and some local products), and pursuit of a chemical fertilizer award sale policy with regard to these products does not meet peasant needs. When herdsmen in pastoral regions sell livestock products, they want to buy products that meet the needs of their nationality. When peasants in mountain regions produce and sell mushrooms, wood fungus,

medicinal herbs, and such native products, they need to be supplied with some grain to eat. Were award sales of fertilizer to be cancelled or changed to award sales of things that these people want for these products, the peasants would be happy. Yet another group of things, whose names are legion, increase the disbursement of award sale chemical fertilizer. These include things like sugar (including sugar crops). Light industry departments have award sales of chemical fertilizer for sugar crops; commercial departments allocate chemical fertilizer for sugar; and agricultural departments provide chemical fertilizer for production (of sugar crops). For jute, ambari hemp, and flue cured tobacco too, there are numerous award sales of chemical fertilizer. This is both disadvantageous in making the most of the role of chemical fertilizer in the promotion of production, but also makes final settlement procedures overly elaborate, greatly increasing the amount of work of grassroots procurement departments.

Furthermore, currently award sales of chemical fertilizer for agricultural sideline products are figured on the basis of quantities procured with no requirements for quality. This not only is bad for improvement in quality of products, but also brings about a decline in the quality of some products.

#### 4. Several Suggestions About Readjustment and Improvement of Policies on Award Sales of Chemical Fertilizer

Policies of award sales of chemical fertilizer for procurement of agricultural sideline products when supplies of chemical fertilizer are currently in rather short supply, play a positive role in promoting production and increasing procurement. But it must be realized that this role is far from being as obvious as it was during the 1960's and 1970's. The main reasons are: first once prices for agricultural products had been readjusted, plus procurement at an additional price of negotiated prices instituted, economic benefits became greater. Second, total output of fertilizer increased very rapidly, and the relationship between supply and demand has moderated relatively. On the basis of these new circumstances, plus implementation of the principle of taking the planned economy as the key link with market regulation being supplementary, we should study policy regulations pertaining to improving award sales of chemical fertilizer for agricultural sideline products.

1. Policies for award sales of chemical fertilizer should continue in force, but efforts should be made to make them uniform throughout the country, so that they serve the planned economy. Ways of doing things whereby each area is a law unto itself, with mutual blockading or even use of increases in award sale standards to enlarge the scope of award sales and get hold of products from neighboring areas, is not in accord with the principles of a planned economy. Therefore, further reorganization and readjustment of the extent of award sales and award sale standards is urgently required to make them substantially uniform. The following should be considered: For products that are produced over a fairly wide area, there should be nationally formulated uniform award sale standards; for products that are produced in some areas and for which the demand is great, when formulating award sale standards, the state can propose ideas for control and, on the



basis of full discussions among areas, set individual standards, but there should be no wide disparity among them. Between major producing areas and non-major producing areas, the award sale standards set by non-major producing areas should take their lead from those of major producing areas, and major producing areas should also show concern for the interests of non-major producing areas and not engage in a mutual contest to "suck in" sources of supply.

2. Award sales of chemical fertilizer should be linked directly to production. It is necessary, first of all, to consider the needs of the country and what helps fulfillment of production and procurement plans. Abolition of the allocation of a chemical fertilizer allowance for agricultural sideline products should be considered, because when agricultural sideline products are purchased the state has already disbursed award sales chemical fertilizer to producers. Allocation of goods is a matter within the state plan; there should be no further giving of chemical fertilizer. Allowances of chemical production for production can be changed to uniform award sales of chemical fertilizer. For goods that do not require direct use of chemical fertilizer, award sales of chemical fertilizer should be canceled or reduced, and a change made to award sales of other goods.

3. Standards for award sales of chemical fertilizer should both help increase or control quantities of commodities and help improve quality of goods. For goods that are necessary and that can be vigorously developed, the policy of award sales of chemical fertilizer should be continued. In cases where output is already greater than sales, as in the case of various kinds of hemp, tobacco, and edible oil-bearing plants, chemical award sales standards should be reduced or cancelled. For varieties of goods for which there is a shortage and for which rapid development is sought, not only should award sales of chemical fertilizer on the basis of amounts procured be formulated, but emphasis should also be placed on award sales of chemical fertilizer on the basis of quality for gradual attainment of the giving of awards on the basis of graduated quality, the higher the quality the greater the award in order to encourage peasants to improve quality of products.

4. Award sales of chemical fertilizer and other materials should be linked to price policies. Today, for some goods there should be award sales of both chemical fertilizer and of grain, cotton cloth, and such things. Some of these goods, however, enjoy an additional price, return of profits, or may be sold at negotiated prices, so award sales of materials for them may be reduced. In the case of those goods for which the procurement price tends to be low, things such as cowhide for which the purchase price is 40 to 50 percent lower than for pigskin, which is obviously unfair, the price paid for cowhide should be raised to make it the same as the price paid for pigskin, and then award sales of chemical fertilizer could be abolished.

5. For chemical fertilizer produced by large chemical fertilizer plants recently built by the state, unified management of resources should be instituted so that provinces and regions in which chemical fertilizer plants are located will not be able to take too much of the output of these chemical

fertilizer plants for their own use, thereby creating inequities from one area to another. Consideration may be given the idea that once a half-and-half division has been made between the state and locales in places where any large chemical fertilizer plant has been built with state investment, any award sales of chemical fertilizer will be the responsibility of the local area, and the central authorities will bear no responsibility for them.

6. When readjusting and reorganizing policies on award sales of chemical fertilizer, a comprehensive accounting should be made with all factors taken into consideration and proper arrangements made to link needs and capabilities when considering matters, acting only insofar as capabilities permit, and making sure that there will be no future accounts owing so as to win the confidence of the people.

9432

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STATE FARMS, LAND RECLAMATION WORK DISCUSSED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION IN CHINA] in Chinese  
No 10, 23 Oct 82 p 56

[Editorial: "Resolutely Implement the Spirit of the 12th Party Congress:  
Fight to Open Up a New Situation in State Farms and Land Reclamation"]

[Text] The 12th National Congress of the CPC--with its great importance and profound influence--has been a congress of unity, a congress which demonstrates the enormous vitality of the party. It has opened up a level road of long-term political stability and vigorous economic development for the CPC and the Chinese people. It has proposed some great tasks for the creation of a new overall situation in construction for socialist modernization.

At present, the first task is to heed the call of the Party Central Committee to organize the broad masses of staff members and workers to plunge into the study, propagation, and implementation of the spirit of the 12th Congress documents. The report and the new party constitution of the 12th Party Congress are the guides to opening up a new situation in the construction of our country's socialist modernization, and are a new program for building the party in the new historical period. We should take the opening speech of Comrade Deng Xiaoping as our guiding ideology, and get a good grip on the study and propagation of the documents of the 12th Party Congress. In terms of breadth, we must make the spirit of the 12th Party Congress familiar in every household and known to the masses of staff members and workers. In terms of depth, we must impart to the broad masses of staff and workers--especially to the cadres of every level and to CPC members--a profound understanding of the fundamental spirit of the documents, and further use them to unify our thoughts and actions. Through study we should unify the thinking of the great numbers of staff and workers on the strategic goals determined by the 12th Party Congress, and further inspire their socialist enthusiasm. At the same time, we should relate the strategic goals, objectives, and measures, as well as the correct orientation proposed by the 12th Party Congress, to the realities of the state farm and land reclamation system, in order to formulate concrete plans and measures for implementing the spirit of the 12th Party Congress in our own departments and opening up a new situation.

The 12th Party Congress has established the magnificent goal of quadrupling the annual gross value of our industrial and agricultural output by the end of this century. The realization of this goal will place China in the front ranks of

the countries of the world in terms of gross national income and the output of major industrial and agricultural products. The Chinese people have yearned for this magnificent goal day and night: today it has been solemnly placed before us.

Our state farm and land reclamation system will shoulder a glorious task in our advance toward this magnificent goal. In 1980, the gross output value of the industrial and agricultural production of China's state farm and land reclamation system was 10.3 billion yuan. According to the call of the Central Committee to quadruple gross output value by the end of the century, the gross output value of the state farm and land reclamation system should reach 41.2 billion yuan by the year 2000: this will require an annual rate of increase of 7.2 percent. The possibility and means of fulfilling this task are questions which should be pondered by the cadres of every level in the state farm and land reclamation system, by CPC members, and by the broad masses of staff and workers. The annual rate of increase in the gross output value of industrial and agricultural products in the state farm and land reclamation system in the last 2 years has been: 1979--11.2 percent; 1980--5.6 percent. Although the value of industrial production increased by 9.2 percent in 1981 over the previous year, the gross output value of industrial and agricultural production increased by less than 1 percent because of some serious natural disasters in several of the major land reclamation areas. This shows that in normal years it is possible by working hard to increase the gross value of industrial and agricultural production at an annual rate of between 7 and 8 percent. However, agricultural production is still influenced by the weather and is very unstable; therefore, if we sum up both the good and bad years it is very difficult to attain an annual rate of increase over 7 percent.

We should take note of the many favorable factors for the state farm and land reclamation system in realizing the magnificent goal of quadrupling in 20 years. First: Since the Third Plenum of the 11th Central Committee, things have been set right, and the orientations and policies of the party have been settled, creating order and unity. Second: The implementation of the financial and production responsibility systems, and the taking of initial steps to reform the "eating from the same big pot" system of administration and the egalitarian distribution system, have aroused the enthusiasm of the enterprises and their staff and workers. Third: We can make changes in our economic structure of monocultural farming and energetically develop diversified farming. Combined agricultural-industrial-commercial enterprises should be set up on a trial basis. The paths of economic development will become broader as we travel along them; all kinds of production and construction will develop steadily; and economic strength will increase conspicuously. Fourth: We have a contingent of 5 million tempered and tested cadres and workers who are able to wage an arduous struggle to open up a new situation. This contingent has a burning desire to realize modernization quickly. Fifth: Over 30 years of construction have given us a fairly good material and technological base. At present, China's state farm and land reclamation system has fixed assets valued at over 10 billion yuan. Many advanced enterprises have emerged with good management, high levels of production, big profits, and rapid development: they have accumulated experience in developing a modernized socialist agriculture. Sixth: The untapped potentials, both in the development of new operations and in the extension of present

operations, are great. We have rich natural resources, and extensive uncultivated mountains, grassy plains, and water surfaces, which await exploitation. Much work can be done with the untapped potentials of presently existing agricultural and industrial enterprises. All we have to do is tap these favorable factors and, with the guidance of the spirit of the 12th Party Congress, we can certainly reach our goal.

In order to realize the goal of our struggle in 20 years, the Central Committee has pointed out that we should divide this period into two strategic segments. In the first decade it is important to lay a good foundation and to create the proper conditions; in the second decade we will enter into a new period of economic prosperity. What kind of foundation work must be done on the state farm and land reclamation front? We believe that we must do a good job on the following tasks: First: the reorganization of enterprises. Many provinces and municipalities have already begun to launch pilot projects and sum up experiences in reorganization. The reorganization of the state farm and land reclamation enterprises will be fully under way in 1983. This reorganization of enterprises is a comprehensive, constructive reorganization. It is both a comprehensive organizing, as well as an important part of basic construction. The results will help to determine whether or not our state farm and land reclamation work will develop smoothly, and whether or not we can make big improvements in economic results. We should do a good job from start to finish, following the orders of the Party Central Committee and the State Council. Through reorganization we can turn the 30 percent of the enterprises which are now running deficits into profitmakers, and enable the profitable enterprises to increase their profits. Second: intensification of the construction of commodity production bases. The important types include grain and soybean, cotton, rubber, dairy cow, sugar, fruit, and tea bases. The necessary labor, material, and financial resources should be assembled to properly construct these bases. Good work in the construction of these few types of bases will mean good work in the production of 80 percent of the important agricultural and animal products of our state farm and land reclamation system. If a good job is done on these bases, then we will have a reliable foundation for realizing our magnificent goal. Third: going further with diversification, and the progressive establishment of an economic system of agricultural-industrial-commercial joint undertakings. We must energetically develop processing operations that make use of agricultural and animal products for their raw materials, as well as commercial operations which concentrate on marketing our own products, thereby rapidly transforming the state operated farms into agricultural-industrial-commercial joint enterprises. Fourth: conscientious fostering of scientific work, and a stepped-up development of brain power. We must improve the training of our staffs and workers, and raise the political, cultural, technical, and administrative standards of our staff and worker contingents, in order to meet the needs of the modernization of our state farm and land reclamation work. Fifth: insofar as the financial and material resources of the state permit, we must reclaim wasteland and increase the amount of arable land in a planned and step-by-step way, in order to ensure that there will be no decreases in China's arable land surface.

The leading groups at every level of the state farm and land reclamation system bear a heavy responsibility in the realization of the strategic goal of quadrupling. Whether or not we can completely bring our advantageous factors into

play, and whether or not we can complete the important tasks described above, depends on the leading comrades at every level--especially the key leading comrades. The leaders at every level should take into consideration past experiences and future possibilities, sit in their command tents and devise strategies, work out every detail of the plans to realize our magnificent goal, and see to it that they are realized.

We believe that with the guidance and encouragement of the spirit of the 12th Party Congress, and under the leadership of the new Central Committee, the great numbers of staff and workers on the state farm and land reclamation front will certainly fight hard to realize the magnificent goal of quadrupling gross output value, with full faith, ardour, and the indomitable spirit of the pioneers of the 1950's!

12187

CSO: 4007/40

## NATIONAL

### DOCTRINAL PROBLEMS WITH RURAL SPECIALIZED HOUSEHOLDS EXAMINED

Beijing NONGYE JINGJI WENTI [Problems in Agricultural Economics] in Chinese  
No 10, 23 Oct 82 pp 3-7, 57

[Article by Yu Guoyan [015 0948 5069], Propaganda Department, Ministry of Agriculture, Animal Husbandry, and Fishery: "Discussion of Problems in Specialized Rural Household"]

[Text] The appearance throughout the country of specialized households during the past 2 or 3 years has attracted popular attention.

#### Status of Specialized Households

Today there are two main kinds of specialized households. One kind is specialized households with whom the collective has contracted for performance of certain tasks. These use a system of contracts with specialized groups, teams, or individuals for a division of labor and a division of kinds of jobs in economic diversification. The other kind is the specialization of peasant household sideline occupations, family sideline production developing from very little self-sufficiency or semi-self-sufficiency in quantity of output to become households with substantial production and fairly high commodity rates for certain lines. Today, most specialized households are in the fields of livestock raising. Some, but comparatively few, are in the farming, forestry, processing, handicraft, and fishing industries. In rural villages, it is largely those peasants who have experience, possess skills and who understand farming (those with ability), plus some knowledgeable middle school graduates who know something about science, who are in the forefront of specialized households. Consequently the labor productivity rate of specialized households is generally notably higher for specialized households than for peasants in general, and their economic benefits are greater. The production methods that specialized households use are not the backward production methods traditionally used by family sideline occupations in the past. The chicken coops that are no higher than a table, the local chicken breeds that produce few eggs, and letting chickens run to forage for themselves cannot be seen in households that specialize in the raising of chickens. What one does see is well-lit hen houses, superior breeds of chickens, use of electricity to hatch eggs, and feeding of mixed feeds. The former situation in rural villages of a single household feeding two or three hogs and eight or ten chickens that roam around at will in front of and behind houses and around the village no longer exists. Traditional sideline occupations have

developed into factory-style intensive operations in which a single household raises more than 10 or as many as more than 100 hogs, or in which a single household raises as few as 100-odd or as many as 1,000-odd chickens. The once-in-the-morning and once-in-the-evening feeding system has given way to full time care by a specific person, and the system of additional help with labor at the outset has given way to most of the workforce working all the time. In many places, there are 1,000, 2,000, or 3,000 such specialized households in a country, and 10,000 or more such households in a prefecture.

A large body of facts shows that the specialized household form of operations is a rather good method under present production conditions in China for developing socialist commodity production. Its main characteristics are a high commodity rate, with economic results that entail little investment, low costs, and large benefits, which is able to stir to the full the enthusiasm of every peasant for increase in reproduction. It represents a trend of change in labor away from the land to the practice of socialized and specialized production, which is a new thing meriting serious attention.

For households specializing in the raising of chickens, the beginning of raising chickens with whatever is available has meant receiving profits in the same year in which the chickens are raised, and the production of about 20 jin of eggs per laying hen in a year for annual profits of 10 to 12 yuan and a commodity rate that is better than 90 percent. Comparison with state-owned farm and collective chicken raising shows much lower costs, much better results, and a much higher commodity rate. A survey done in Qiqihaer City in Heilongjiang Province shows each chicken on state-owned farms there produced an average of 16 jin of eggs per year; chickens on collectives produced an average 14 jin per chicken, and specialized households produced 20 jin per chicken. State-owned farms earned no money; collectives earned profits of only 4 to 5 yuan per chicken, and specialized households earned 10 to 12 yuan per chicken. The commodity rate for specialized households was more than 90 percent. A housewife in an ordinary household who raises 80 to 100 chickens "looks after the household, cooks, takes care of the children, and collects the eggs," earning an annual income of 800 to 1,000 yuan. A resident of this city names Han Xiaofen [7281 1420 53581], who became 57 years old this year, fed 400 laying hens, earning a monthly net income of 420 yuan, more than double the total amount earned by four working people who worked outside the household. People said in fun that "she earns more than the Provincial SSP Committee secretary." In 1980, Qiqihaer's 6,000 households specializing in the raising of chickens provided 68.3 percent of all the city's commodity chickens and 83 percent of all its commodity eggs.

Another example is households specializing in the raising of hogs. Liu Huimin [0491 2585 3046] of the Xibada No 1 Brigade of Xingshan Commune in Lishu County, Siping Prefecture, Jilin Province raised a total of 114 hogs between 1978 and 1980. He turned 27 commodity hogs over to the state, sold 77 shoats, and either consumed or sold 11 fattened hogs. He also provided the collective with 138 cartloads of manure, earning a total of more than 14,000 yuan and net earnings of more than 9,200 yuan. In 1981 he raised 22 hogs, turning over to the state 19 fattened hogs weighing somewhat more than 7,000 jin. He also raised more than 300 chickens. His net income for the year was more than 5,000 yuan, an average of more than 700 yuan per person in his family of



seven. Specialized households and key households engaged in the raising of hogs in Siping Prefecture now number 9,838, or 1.7 percent of peasant households in the prefecture. In the course of a year they turn over to the state more than 53,700 hogs for a 14.15 percent fulfillment of live hog quotas for the prefecture as a whole. The prefecture also has 6,462 specialized households and key households engaged in the raising of chickens. This is 1.1 percent of the total number of peasant households. Figuring on the bases of 100 eggs per chicken turned over to the state, these chicken raising households turn over to that state 3.89 million fresh eggs annually. These specialized households and key households are thus able by themselves to fulfill the entire prefecture's quota of fresh eggs to be turned over to the state. This equals the output from a state-run chicken farm having 390,000 chickens.

In the process of developing specialized households, by treating the two kinds of specialized households separately, all jurisdictions handle well the relationship among the country, the collective, and commune members individually.

The main form of responsibility system that production teams use in contracting economic diversification to specialized contracting households run by individuals is that of "centralized administration and specialized contracting." On the basis of the various production components and production requirements of the collective economy, the production team centralizes whatever lends itself to centralization and decentralizes whatever lends itself to decentralization, and links calculation of compensation to output (or output value) through a system of contracts entered into with individual teams, households, or workers.

Specialized households developed out of family sideline occupations have been divided into specialized households and key households in some places. In specialized households, the principal workforces do not engage in collective production, but instead turn over to production teams accumulations from an equivalent amount of labor and enjoy the same pay and emoluments as commune members. The principal workforces in key households are not relieved from collective production; only the supplemental workforces are relieved of collective production and do not have to turn over accumulations to the production team. In addition to award grain provided them by the state, production teams are also required to provide specialized households and key households support through various means such as giving them varying amounts of land on which to grow livestock feed or giving them livestock feed grain, and banks giving them a certain amount of support with loans.

#### New Problems Posed in Practice by Specialized Households

In practice, specialized households have posed numerous new problems that require our study and summarization.

1. Specialized households pose new demands for the specialization and socialization of production.

According to data obtained from a survey done in Gansu Province, they pose the following several problems currently requiring solution:

(1) Need for specialized production of livestock feed and supply units. Once specialized households have greatly developed a livestock raising industry, they come up against the problem of livestock feed and require mixed feeds that meet quality standards. By way of solving this problem Lanzhou established a livestock feed company, and set up a livestock feed processing plant. One after another, other prefectures and counties developed small livestock feed processing plants.

(2) Need for Supply of Superior Breeds to Keep Pace. Apart from small quantities of superior breed provided by the state, today most are hybrid breeds the masses have developed. This year a situation of "difficulties in buying chickens" occurred in the buying of young chicks. In order to solve this problem, numerous specialized households formed associations of several households to hatch baby chicks, which solved the problem of a major portion of the chicks required. In Lanzhou City, more than 10 households specializing in the hatching of baby chicks have come into being, each household hatching between 3,000 and 4,000 or even as many as 10,000 baby chicks. The city has also signed contracts with households specializing in the raising of chickens for the supply of young chicks with rather good results.

(3) Need For Small, Handy Machines to Keep Apace. In order to begin large scale hatching of baby chicks, Wang Zhongyi [3769 1813 5030], a retired cadre in Lanzhou, spent 1,000 yuan of his own money to install an electrically-operated incubator, and hatched more than 10,000 chicks. He also wants to buy a motor-cycle to help haul chicken feed and to deliver chicks to customers. Some specialized households feel that chopping up green feed is too much work and they want small, handy chopping machines.

(4) Need For Scientific Knowledge About Livestock Feed and Epidemic Prevention Measures Must Catch Up Very Rapidly. Nowadays the masses demand spread of science and epidemic prevention to eradicate diseases. As far as chickens are concerned, the masses most dread chicken pest. Once chicken pest becomes infectious, the entire flock dies. This requires that animal husbandry research and veterinary medicine departments strive to solve problems in scientific chicken raising.

(5) Gradual Development of Processing Industries For Fowl, Eggs, and Milk. This includes preserved eggs, hundred year old eggs, tea eggs, salted eggs, roast chicken, soy sauce chicken, stewed chicken, milk powder, sour milk, etc.

The aforementioned several problems reported from Gansu exist everywhere. One can say that unless these problems are solved and unless specialized households further expand the scale of their production, improvement in labor productivity rates will be difficult.

Because of the need for specialized households to expand production further, two new economic forms have appeared everywhere as follows:

(1) Following development of specialized households, how to head in the direction of new associations on a consciously voluntary basis came to be explored everywhere. The forms of association that have currently taken place

are of many kinds. Some entail mutual help with labor; some entail technical cooperation; and some entail economic association. In suburban Beijing, numerous new associated bodies have developed over the past year. Commune and brigade semi-mechanized chicken farms in Huairou County have decided to enter into joint operations with key households and specialized households. Changping County plans to set up a domestic poultry company and to enter into joint operations with commune and brigade chicken farms, specialized households, and key households in everything from breeding of superior breeds, supplying chicks, providing technical training, epidemic disease prevention and control, and management of livestock raising to marketing of products. In Gansu Province, the Linxia County Science Commission signed agreements with 16 households specializing in the raising of chickens whereby the science commission would supply superior breeds, give scientific guidance, provide professional care, and breed. In Guangdong Province, the Shunde County Animal Husbandry and Veterinary Medicine Station signed agreements with specialized households whereby it would be responsible for providing superior breeds, for livestock feed, for prevention of epidemic diseases, and for marketing, while the specialized households would be responsible for taking care of the livestock. Economic effectiveness has been very good.

(2) Corresponding Emergence of a Group of Service Stations of Various Kinds to Provide Services to Specialized Households.

A survey conducted jointly by the national Animal Husbandry Bureau and the Heilongjiang Provincial Animal Husbandry Bureau has shown that accompanying specialized household demands for the socialization of production, chicken raising service stations have sprung up to meet the need to provide specialized households with superior breeds and livestock feed, to market their products and to provide technical guidance in Haerbin, Qiqihaer, Jiamusi, and Hegang in Heilongjiang Province. Now there are five kinds of such service stations as follows: (1) state-operated ones; (2) collectively operated ones; (3) street residents committee operated ones; (4) those operated jointly by collectives and chicken raising households; and (5) individual ventures. Services are provided mostly through a contract system, chicken raising households, egg hatching farms, livestock feed companies, and food companies working in close association to form a whole.

Establishment of service stations has set the stage for emancipation of productivity and improvements in the labor productivity rate. Usually a housewife in a typical household would raise a few score chickens, sell their eggs, buy feed and have to look after getting young chicks to raise, travelling several li or more than 10 li at a time and being so busy she could never finish her work. She would also have to call on male workers in the family for help regularly, thereby interfering with collective production. After service stations were established, this contradiction was solved. Eggs could be sold, feed bought, and chicks provided without going out of the village. Old, weak, infirm, and crippled people who raised chickens at home could not get around easily, but the service stations provided chicks and feed, and bought eggs at their doors. Today, the same housewife in a typical family can raise several hundred chickens without too much exertion, and when some housewives cannot do everything, male workers in the family can help out in their spare time.

## 2. Policy Questions Posed by Further Development of Specialized Households

Specialized households developed quickly in Siping Prefecture, Jilin Province. The principal specific policies pertaining to specialized households that they have summarized are the following:

(1) The policy of providing land on which to grow livestock feed is the material foundation for development of specialized households and key households. As of the end of April 1981, Siping Prefecture had 8,896 production teams, or 70 percent of the total number that had allocated land to commune members on which they could grow livestock feed.

(2) The policy whereby commercial departments signed livestock product procurement agreements with the "two households" [key households and specialized households] assured priority to the "two households" in the purchase of livestock products. The prefecture CCP committee and government administrative offices have required that all cities and counties instruct their commercial departments to organize forces and sign purchase and marketing agreements with individual households.

(3) The policy of permitting the "two households" to have privately retained people [those not required to work for the collective] is an important policy in the correct handling of relationships between specialized households and commune members, and between specialized households and the collective. In accordance with the spirit of Central Committee Document 13 of 1981, which "permits some semi-ablebodied workers and supplementary workers not to engage in collective labor so as to be able to devote themselves fully, insofar as their strength permits, to family sideline occupations," specialized households in cities and counties have commonly kept privately retained people as requirements have dictated.

A look at survey data from all jurisdictions shows that accompanying further development of specialized household production has been the emergence of new situations that pose some new problems for policies concerned. One policy on which there is considerable divergence is specialized household hiring of workers. Just when is a worker hired and should the number of hired workers be limited? What should be the limit on hiring of people. Perceptions are far from unanimous. Consequently, on the issue of specialized households hiring workers, how to investigate and study to come up with correct policy limitations has been placed on daily agendas.

The Inspiration That The Practice of Specialized Households Has Given Us

What inspiration has the practice of specialized households given us during the past 3 years?

The Direction of Development Is Toward Specialization and Socialization.

The emergence of specialized households and key households has made us realize the embryonic state of specialized commodity production in China's agriculture and to see one path toward specialization and socialization.

Development of specialized households has gradually parted from the former "small but complete" economic structure. First of all, specialized households separated from agriculture and farming. As a result of needs in the development of production, specialized households did not have to work in the farming industry, and with further development they will separate from the animal husbandry industry or other industries. Those who raise chickens do not start from the hatching of chicks, but rather certain people specialize in the hatching of chicks, while others specialize in the raising of chickens or the raising of hogs, and some might specialize in the raising of sows while others specialize in the raising of boars, while still others specialize in the raising of porkers. Possibly in the future farming industry some will specialize in breeding while others will specialize in plant protection. In separating from the "small but complete" economic structure, specialized households have become specialized and have become "small but specialized." Specialization requires socialization in and of itself. Once specialization occurs, issues arise of you serve me and I serve you. There are other problems in production, supply, and marketing. Naturally, solution to these problems must have a premise, which is development as commodity production develops.

Development of the rural animal husbandry industry can give rise to problems in milk processing, and as a result of future development of agriculture, problems may arise in food product processing. In short, the direction of development is toward specialization and socialization.

Specialized Households Are Products of the Transitional Stage in the Development of China's Rural Villages From a Self-sufficient and Semi-self-sufficient Economy Toward a Commodity Economy, and in the Development from a Single Product Grain Farming Industry Toward Economic Diversification; They are a Fine Economic Form For Development of Rural Commodity Production at the Present Stage in China.

The economic bases and conditions for production team collective contracting with specialized households for economic diversification are economic diversification and the division of labor and division of trades. The emergence of these specialized households helps consolidation and development of collective economic diversification, the division of labor and division of trades thereby becoming more specialized and more stabilized, thus hastening development of production teams from their existing self-sufficient economy to a commodity economy.

The specialized households that have developed out of commune member family sideline occupations show that China's individual economy possesses very great potential. This is because there is a general oversupply of rural family workforces, which the country's industry is unable to absorb in large numbers under present circumstances, and for who finding employment except as laborers required by collectives is a problem in urgent need of solution. On the other hand, China has several thousand years of experience in traditional agricultural production skills, and among the broad masses of peasants there are a group of able people who possess an abundance of skills for development of sideline occupations. By turning their skills to advantage, great material wealth can be created. As a result of "leftist" mistakes in the past, we

overlooked the bringing into play of the positive role of the individual economy. Rural villages practiced a single crop collective economy with overly centralized management, plus a one-sided attention to grain crops, thereby slighting and damaging economic diversification, treating family sideline occupations as so-called "vestiges of capitalism," and treating as "upstart households," "nouveau riche households," and "new capitalist class elements" those who made more income than peasants in general from legitimate development of household sideline occupations. As a result, for a long time, family sideline occupations could not develop, and a lot of talented people with experience, skills, and who understook how to do things were submerged. This was a very great loss. Practice has shown that so long as the collective economy is paramount, full use of the role of the individual economy is beneficial to the country, the collective and individual commune members.

Under Present Conditions in China, Specialized Households Are Characterized By Small Investment, a High Commodity Rate, Good Economic Results, and High Income In Development of Agricultural Commodity Production, And They Also Fit In With the General Program of National Economic Construction.

In the process of developing production of agricultural commodities, China has gone through a period when it tried to take the path of the United States and some developed European countries in establishing various industrial plants (or farms) using a high degree of mechanization, electrification, and automation to produce high labor productivity rates and commodity rates. In order to satisfy the need for agricultural sideline products required in the daily life of the people of large cities, during the past several years we have set up a certain number of modern chicken farms and hog raising farms in the suburbs of some large cities. However, practice has shown that this path does not fit in with China's natural circumstances or the level of the country's economic development at the present stage. Except in individual cases where needed or where conditions are at hand, China's production of agricultural commodities cannot now be achieved through use of highly mechanized plants (or farms). Very clearly, China's industry is backward and unable to absorb excess rural workforces. China's modernization must take into consideration ways of finding opportunities for its excess rural workforces. China is still very poor, and neither the national economy nor the commune and brigade collective economy can obligate sufficient funds for agriculture with modern equipment and technical equipment.

During the past 2 years we have watched the experiences of Yugoslavia in developing integrated agricultural, industrial, and commercial enterprises. In its development of the production of agricultural commodities, in addition to directly relying on production by integrated agricultural, industrial, and commercial enterprises owned by society, a large amount of production in Yugoslavia has come from an "alliance" of integrated agricultural, industrial, and commercial enterprises with individual peasants who hold 83 percent of the nation's cultivated land. Today in Yugoslavia, more than half the state's needs for commodity grain comes from integrated agricultural, industrial, and commercial enterprises, while more than 88 percent of its livestock products come from individual rural peasant households. The land that peasants cultivate is privately owned by the peasants, and their alliance with integrated agricultural, industrial, and commercial enterprises is largely done through

agreements whereby integrated agricultural, industrial, and commercial enterprises provide seeds and seedlings, livestock feed, disease prevention and such assistance with the means of production and techniques, and whereby the commodities that individual households produce are marketed exclusively by the integrated agricultural, industrial, and commercial enterprises. Yugoslavia has made full use of the role of individual households in development of commodity production such as livestock products, and its full use of rural livestock sheds and surplus peasant labor is a good method requiring small investment for good results that is also able to provide fully for rural workforces. This fits in with current levels of productivity in Yugoslavia. Obviously, we can draw useful lessons from Yugoslavia's way of doing things. The problem is that in Yugoslavia, means of production such as land farmed by individual specialized households is privately owned, while we still have a system of collective ownership, which makes a difference.

Therefore, as to how to develop China's production of agricultural commodities and how to take the path of Chinese style specialization and socialization requires that we proceed from realities in our own country, and that we diligently summarize past practice, while at the same time learning lessons from foreign experience. The specialized households that have emerged in China today as an economic form merit our diligent attention.

In terms of the Current Specialized Household Situation, One Problem That Bears on How to Persevere in Socialist, Chinese Style Specialization and Socialization Is The Problem of How to Link Socialist Reform of Agriculture With Development of Agricultural Productivity, Which Awaits Steady Future Practice.

Practice during the past 2 or 3 years has shown that further development of specialized household production toward specialization and socialization must inevitably intensify their dependence on the state, and must inevitably heighten their necessity for building cooperative relationships with relevant sectors of society. Take a specialized household that raises 1,000 chickens as an example. Such a household would find it difficult by itself to solve a series of problems such as seeds and seedlings, livestock feed, epidemic prevention, and marketing of products. Yet another problem would be that this specialized household would inevitably require new associations of economic organization in order to expand the scale of its production.

We say that the key to whether it will be possible to adhere to a Chinese style socialist path of specialization and socialization of agriculture lies in the practice of correct leadership of specialized households by party organizations and government departments at all levels. In solving the two aforementioned problems, in particular, it will be necessary both to give attention to preventing specialized households from leaving the socialist road to go off in the erroneous direction of capitalist operations, and to pay attention to prevention of the "leftist" errors of the past, a repetition of failure to take into consideration differences in economic conditions from one area to another, forcing everything into a single form, practicing arbitrary uniformity, being anxious to form associations as well as associating for reasons other than development of production, not adhering to the principal of voluntary

participation for mutual benefit, and such erroneous methods. Something that should arouse our assiduous attention is that as a result of the very deep influence of erroneous "leftist" ideology over a long period of time, it is very easy consciously or unconsciously to apply the "leftist" rigamarole of the past to new matters that crop up, and as soon as strengthening of leadership is mentioned it is extremely easy to think of the "merging" and "associating" of the past, that results in action to "combine," but the enthusiasm of the peasants will be obliterated in the process. For this reason, the issue of linking socialist reform with development of productivity will have to await new answers that we derive from practice. The socialization and specialization that have been a part of the specialized household production process have made us clearly realize that family operations and small scale agricultural economies are two different concepts that positively cannot be equated with each other. In addition, we also realize that rural production teams in their present size and form are unable to accommodate or solve the demands and problems of socialization and specialization that specialized households pose. Associated groups of specialized households can no longer take the old road of the past production teams organized on the basis of administrative "planning." They are rather new economic associations founded on voluntary participation for mutual benefit, democracy and equality, entry into or exit from which is entirely free. So-called "associated but not united" is one of their forms, as for example, specialized association, or association among one household and another or between administrators and workers. How those who are adept at administration can associate with ordinary workers is a new problem requiring that attention be given to bringing into play the enthusiasm of the administrators. This cannot be like the cooperatives that were run in the past in which workpoints were calculated on the basis of work done for both the cooperative head and cooperative members alike. Proper forms will have to be adopted so that the role of administrative personnel is genuinely brought into play. In future, diverse forms of specialized association and specialized associated groups may emerge. Even though association is a form, to be specialized is not necessarily to practice association, and it is possible that some individual households with a specialized division of labor may continue for a long time. Socialization on the basis of specialities is objectively a form of association.

Need For Prudent and Correct Handling of Problems With Speculation and Profiteering and the Hiring of Labor Among Some Specialized Household in Rural Villages. Need to Keep the Good and Get Rid of the Bad and to Guide Action Adroitly According to Circumstances.

A clear line should be drawn between profiteering and speculation and becoming wealthy through labors. There are some problems in rural villages about which we should not hastily take a stand in handling or knock over with a single blow, but which we should watch before speaking, but clearly speculation and profiteering, and commission of economic crimes have to be taken in hand. Everything has a right and a wrong. Though some seem not to be developing in the right direction, yet society needs them, so it is best to watch and try to find ways to keep the good and get rid of the bad, and to guide action adroitly according to circumstances so as to preserve their positive role,



restrict their negative role and eliminate their side effects. For everything that comes about there is a need. We must study what means can be used to replace it and how to channel it, and not use simple methods to cut it down. Hiring of workers is not the right direction, of course, and it cannot be encouraged. It cannot be allowed to run rampant. Nevertheless, this is the result of further development of key households, specialized households, and administrators, and inevitably goes beyond the confines of households. When one wants to develop commodity production and there are insufficient hands to do the job, what is to be done? Good methods that can be used have not as yet been found. We have to find a road such as the following: one that both makes use of the role of talented people and can overcome apathy. The general principle should be: First, adherence to socialism and, second, not taking the old roads of the past.

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## SOIL IMPROVEMENT FOR INCREASED WHEAT YIELDS DISCUSSED

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[Article by Zhang Erjun [1728 1422 0193] and Sun Zuochen [1327 0155 5256]: "Improvement in Black Sajong Soil for Tremendously Increased Wheat Yields"]

[Text] Jiagou Farm is located in a low-lying lake area in the northeastern part of Su County in Anhui Province. It has 417 employees, and 11,360 mu of cultivated land, all of which is typical black sajong soil. Soil tests done in 1978 show an organic content of between 0.8 and 1 percent, and an effective phosphate content averaging 0.675 jin per mu. So lacking in phosphate was the soil that it was virtually unmeasurable in some places. The soil has poor physical properties, is prone to drought and waterlogging, and does not retain water or fertilizer well. The soil is generally characterized as being prone to waterlogging, prone to drought, infertile, and leathery. In the 19 years between the time when the farm was founded in 1962 and 1980, grain yields have been less than 100 jin per mu in 11 years, and were no greater than 200 jin in the other 8 years. For many years, this farm has had as its combat goal the production of 2.5 million jin of grain to turn losses into profits, but it has never achieved it.

In 1970 the party organization in the Provincial Department of Agriculture and Land Reclamation readjusted Jiagou Farm's leadership team, and the farm persevered in comprehensive control of the black sajong soil. It did a solid job of planting green manure, fertilizing with phosphate scientifically, and eliminating weeds. After 3 consecutive years of control, soil fertility changed remarkably. Its organic content increased to 1.34 percent; complete nitrogen reached 0.0857 percent; and quick acting phosphate increased to 1.9 jin per mu. As a result of these changes in the soil's most fundamental conditions, yields rose year after year. Wheat production, in particular, made great strides for 2 consecutive years beginning in 1981. In 1981 wheat yields per unit of area and total output rose to 256.8 jin per mu and to 2,915,500 jin respectively, the farm thereby removing for the first time in 19 years its notoriety as a losing farm. Its profits for the entire year amounted to 81,000 yuan, and in 1982 wheat output from 11,000 mu rose even higher with yields of 409 jin per unit of area and an output totaling 4.5 million jin. Profits from a single wheat crop were 300,000 yuan.

## 1. Increased Growing of Green Manures and Increased Green Manure Output

Though this farm had grown green manure before 1979, not much effort had been put into it; the green manure had not grown well and output was very low. For a long time, a considerable number of people had formed the notion that growing of green manure in the soil of Jiagou Farm was not worth the trouble, and that plowing and sunning the soil accomplished more. Taking account of this state of affairs, the farm's leaders and science and technology personnel worked together on a conscientious summarization and analysis of reasons why past yields of green manure had not been high, after which 4,389 mu of green manure was planted as the crop just before wheat. In addition, attention was devoted to techniques for the growing of green manure. As a result, yields of fresh green manure averaged 1,700 jin per mu. In 1980 the growing of summer green manure was expanded to 5,156 mu, which was 45.6 percent of the total cultivated land area, and yields of fresh green manure increased to 2,500 jin per mu. In 1981, the growing of green manure as the next crop following wheat was expanded to 7,731 mu, or 67 percent of the cultivated land, for yields of fresh green manure averaging 2,700 jin per mu.

As the green manure area expanded year by year, output rose year by year. Over a 3 year period, a total of 17,276 mu, or 152 percent of the cultivated land, was planted to green manure for an output of fresh green manure totaling 42 million jin, or an aggregate average of 3,700 jin per mu. This was equivalent to an increase of 19.24 jin of pure nitrogen, 2.59 jin of pure phosphate, and 5.55 jin of pure potash per mu. The soil's organic content increased, and the soil's ability to retain water and fertilizer increased. This year the wheat was damaged during the late stage of its growth by severe drought and hot dry winds, and the weight per thousand wheat grains was 3 grams higher from fields where green manure had been grown than from fields where it had not. The soil's physical structure improved and, everything else being equal, the soil could be worked 2 or 3 days longer than formerly. The soil was less resisting. Tractor drivers reported that formerly the Dongfanghong-75 tractor had been unable to pull a three-share plow through the soil, but now it could pull a four or five-share plow.

This farm had four experiences in how to grow summer green manure and how to increase summer wheat yields as follows. (1) Attention to the matching of varieties. This farm grew mostly sesbania as a green manure in conjunction with false hemp [*crotalaria juncea*] and mung beans. Sesbania is characterized by tolerance of waterlogging and drought, and farmability. It readily produces consistently high yields. As a result the area devoted to the growing of it was largest--70 percent of the green manure area. False hemp has a rather high fertilizer effect and it grows well in the early stage; however, it does not tolerate stagnant water, and it falls prey to diseases and insect pests. The masses say that it is "delicate," so it is used only to fill in between crops on a certain area, and turned under early for the planting of early wheat. Mung beans are grown only as late green manure. The masses call it an emergency green manure. (2) On-time sowing and getting a full stand are the keys to increasing green manure yields. Nowadays this farm devotes the same amount of attention to the growing of green manure as to the growing of grain crops, doing everything possible to sow early and to get a full stand of seedlings. Sesbania and false hemp are sown in late June or early July, and mung

beans are sown before mid-July. A sowing drill is used to sow all three in rows so as to increase the amount of seeds sown, density producing high yields.

(3) Increased fertilization with chemical fertilizer is a change from the old practice whereby no chemical fertilizer was added when green manure was grown. Fertilizing with phosphate is emphasized, usually 50 jin per mu of phosphate being used as a base fertilizer. In some plots where growth is poor, a small top dressing of nitrogenous fertilizer is added to give the seedlings a boost.

(4) Turning under at the right time. For sesbania and other green manures, there are many factors limiting the time when turning under takes place, and overemphasis of one factor or another is to be avoided. If turned under late, output may be a little higher, but Jiagou Farm frequently experiences autumn drought, which keeps the green manure from rotting and decomposing. This not only lowers the green manure's fertilizer effectiveness, but since a "dry green manure layer" is in the cultivated soil layer, wheat seedlings are also strangled, causing a lack of plants and cracking of the soil around plants. If, on the other hand, overcast or rainy weather ensues, and the green manure cannot be turned under at the right time, it will not be possible to sow wheat at the right time. Therefore, in figuring out the right time for turning under green manure, consideration has to be given quantity of green manure and the fertilizer effect, and being able to plant wheat on time so that there will be a full stand of sturdy wheat seedlings before the onset of winter. In general, the former must be subordinated to the latter. After summarizing the positive and negative lessons of experience, Jiagou Farm advanced the time for turning under green manure to between 10 and 20 August giving the green manure a growing season of from 45 to 50 days. They also continued the deep plowing and sunning of fields. This helped the green manure rot and decompose and allowed the soil to mature; it was also extremely beneficial for early planting of the wheat to get a full stand of seedlings.

## 2. Increased Phosphate Fertilization, Phosphate Increasing Nitrogen

Increased fertilization with phosphate was yet another major reason for the Jiagou Farm's rapid development of wheat production. In 1970 the farm first set up a pilot project in the fourth production team where soil fertility was poorest. In 1979 this production team had planted 3,200 mu of wheat and harvested yields averaging only 50 jin per mu. During fall planting that year, between 70 and 80 jin per mu of phosphate fertilizer was used as base fertilizer, and in a situation of the same growing conditions as in 1979, this production team harvested yields of 220 jin per mu of wheat from a 3,000 mu area in 1980. This was 3.4 times more than in 1979. Wheat yields increased by an average of 2.4 jin per jin of phosphate fertilizer. This fact had a great shock effect on Jiagou Farm. When this farm sowed wheat in the fall of 1980, it applied an average of 96 jin per mu of phosphate as a base fertilizer, and in 1981 yields reached 256.8 jin per mu, up 45.6 percent from 1980. In 1981's fall wheat planting, 840 tons of phosphate fertilizer were applied, an average of 140 jin per mu of phosphate as a base fertilizer. In 1982 wheat yields increased by 50 percent per unit of area over 1981's.

In its use of phosphate fertilizer, this farm gave serious attention to applying it deeply, to applying it early, to applying it evenly, to pulverizing it before use, and to spreading it evenly on the surface of the soil before the final shallow plowing just before the wheat was sown, sowing being done immediately after plowing so that the phosphate fertilizer would reach 10 to 15 centimeters below the surface. Second was fertilizing the green manure and

soybean crops preceeding the wheat with phosphate fertilizer so that the phosphate could play a role in increasing nitrogen. In this way, at the time of fall sowing, either no or little further fertilization with phosphate was necessary. Third was to apply a top dressing of phosphate if seedling appearance indicated need. For category three wheat seedlings, between 30 and 40 jin per mu of phosphate fertilizer was applied in equal proportions with nitrogenous fertilizer, using seeders and fertilizer spreaders and sowing to a depth of 6 to 8 centimeters. This was more effective in promoting a turn around in weak seedlings than fertilizing with nitrogenous fertilizer alone. This same method was used with soybeans and green manure.

Three years of fertilizing with phosphate plus increased growing of green manure, and the situation in supply of phosphate for the growing of wheat changed fundamentally. Formerly unless fertilization with phosphate was done, crops would not grow, but now even if no phosphate was applied on some plots, the degree of reduction in yields was not as noticeable as formerly. Overall benefit from 3 years of fertilizing with phosphate showed a 1:2.5 ratio between investment and results.

#### Chemical Weeding and Elimination of Weed Pests

Chemical weeding and the elimination of weed pests was a means of helping assure this farm's continuous wheat output increases. Because this farm had formerly farmed in an extensive way for a long period of time, alternating a crop of wheat with sunning of the fields, noxious weeds--mostly wild garlic, field thistle, and wild horseradish--proliferated; weeds were thick and caused serious damage. Most fields had from 300 to 500 weeds per square meter on average, and as many as 1,000 on seriously infested plots. In 1980 the farm's fourth production team turned under 1,800 mu of wheat because of the too large number of weeds. The wheat harvested from some plots contained 20 percent weed seeds among the grain. Grain stations did not want to accept it, and employees did not want to eat it.

In 1979 this farm took action in two ways to solve the weed pest problem. One was a change in its farming system in combination with deep turning of the soil. It changed from the former wheat--field sunning to wheat--green manure and wheat--beans, the multiple cropping index reaching 200 percent. this restructuring confused the laws governing weed growth, and greatly hampered weed growth. Second was use of herbicides to get rid of weeds. Small area experiments were conducted in 1979, and in 1980 large area demonstrations were given. In 1980 the chemically weeded area amounted to 4,500 mu, and in 1982 it reached 11,000 mu. After 2 years of chemical weeding over wide areas, results in elimination of weeds were better than 95 percent, the three major weed pests being virtually eliminated.

The chemical weeding of this farm's wheatfields was done at two separate times during the wheat's growth as follows: (1) Between the end of October and the middle of November, when the early sown wheat had 4 or 5 leaves and tillering was in full swing. On a clear day when the temperature was about 15 degrees centigrade, 6 to 8 qian of 2,4-DB or 1 to 1.2 liang of MCPA [0059 3946 0934 3048] was added to 30 jin of water per mu and sprayed in a fine mist, the wheat remaining safe. (2) On a clear day between mid and late March, before

the wheat began to joint, between 8 qian and 1 liang of 2,4-DB or 1.6 liang of erjia silu was added to 30 jin of water for spraying in a fine mist. With the second application, the parts of wild garlic and field thistles above ground changed from green to yellow and gradually wilted and died, and wild horseradish plants completely died. By the second year the wild garlic bulbs below ground could still sprout, but rather weakly, and though the roots of field thistles were still able to grow, the plants could not flower to set seeds. Thus, after two consecutive applications, wild garlic, field thistles, and wild horseradish were virtually eliminated.

The result of Jiagou Farm's 3 years of improving and increasing the fertility of its black sajong soil was that the vicious cycle in agricultural production began to develop into a benign cycle, and wheat yields began to develop from low and inconsistent to consistently high ones. We must continue to walk this organic agriculture road and widen it steadily, as well as speed up the equipping of water conservancy projects. Then we will be able to make black sajong soil into farmland that produces consistently high yields.

0432  
CS0: 4007/31

# CANGZHOU ADOPTS NEW WATER CONSERVANCY MEASURES

Shijiazhuang HEBEI RIBAO in Chinese 17 Oct 82 p 2

[Article: "Scientists and Technicians Make Suggestions To Improve Water Conservancy Projects in Cangzhou Prefecture"]

[Text] Scientific and technical workers engaged in water conservancy work in Cangzhou Prefecture in Hebei, with a view to coping in good time with fluctuations of the water level on both banks of the canal caused by seepage from the Yellow River as it passed through the South Canal at the time when "the Yellow River was diverted to Tianjin," have made suggestions to the concerned authorities to prevent the secondary deposit of salt in hundreds of thousands of mu of farmland and to divert tens of millions of cubic meters of fresh water to irrigate the land against the drought.

The main thrust of the suggestions made by the scientific and technical personnel engaged in water conservancy work in the prefecture was the proper laying out of a series of shallow pumping wells and vacuum wells to lower the underground water level raised by water seeping within a distance of 1,500 meters along both banks of the South Canal. Up to the present, 2,400 shallow pumping wells and 12,000 vacuum and hand-pumped vacuum wells have been drilled along both banks of the canal as suggested. During the severe drought which occurred in Cangzhou Prefecture this year, more wheat fields have been irrigated than last year by using these pumping wells and vacuum wells.

The South Canal traverses seven counties and cities in Cangzhou Prefecture for a distance of 214 kilometers. The use of flood water for irrigation over a long period in the past has caused an accumulation of alkali and created swamps as a result of seepage along the canal. As a consequence of reforms introduced over a period of 10 years following the liberation and the drying up of the canal after years of drought, the underground water level has receded considerably and the saline content of the soil has been reduced. Of the original 600,000 mu of land with a high saline and alkali content, three quarters have been turned into fertile fields. The alkali content in the remaining quarter has also been reduced to a significant extent.

Since "the diversion of the Yellow River to Tianjin" last year, the cadres and masses in Cangzhou Prefecture, having learned the historic lesson of the damage caused by saline and alkali deposits and the swamps on the two banks

resulting from seepage of the South Canal in the past, were quite concerned that seepage from Yellow River as it passed the South Canal to rise and that the salt would back up with the water to cause once again the salinization of the land. The Water Conservancy Test Station of the Water Conservancy Bureau in Cangzhou Prefecture, acting on the suggestion made by the scientific committee of the province to make the South Canal the main testing ground for water seepage, set up a number of observation wells and a test line to observe the movement of the water level in the middle of October last year. According to observations, it took the water from the source of the Yellow River 57 days, that is, from 22 October to 19 December last year, to flow to the observation point. As the water from the Yellow River seeped into the South Canal, the underground water level along the canal began to rise. The underground water level at No 1 Observation Well 37 meters from the canal rose 1.47 meters, while the underground water level at No 2 Observation Well 110 meters from the canal rose 1.02 meters. The land within 100 meters of the canal was found to be swampy and within the critical salinization limit, while the land within 500 meters of the canal was found to have been heavily laden with salt deposits. It is estimated that some 370,000 mu of land along the banks of the South Canal in Cangzhou Prefecture may be classified as swampland in danger of secondary salinization. The materials on the technicians as well as their recommendations have been given serious study by the land commission and the administrative office in Cangzhou. Since the beginning of this year, the responsible comrades in the land commission and the administrative office have held a number of meetings with the heads of the water conservancy bureaus along the banks of the canal to decide on the location of wells to be drilled and to discuss what should be done to improve the land. The Water Conservancy Bureau in the prefecture has also assigned a group of cadres to the sites to make rounds of inspection and to provide guidance. A number of leadership teams have been set up by the counties, communes and brigades along the canal to undertake the drilling of pumping wells and to inspect the wells one by one to ensure that they are in good operating conditions.

9621

CSO: 4007/49



# HEBEI ISSUES GUIDELINES ON COTTON PROCUREMENT WORK

## Instructions Issued

Shijiazhuang HEBEI RIBAO in Chinese 17 Oct 82 p 1

[Article: "Hebei Provincial Government Issues Instructions Requiring the Various Localities To Do a Good Job in Cotton Procurement"]

[Text] Hebei enjoyed a bumper cotton crop this year and the procurement work is coming to a peak. Because of the increase in cotton production and the adoption of the system by most of the communes and brigades for each household to handle the delivery and settlement of accounts separately, procurement work has increased. Although the number of procurement stations and personnel has been increased, it is not sufficient to accommodate the needs of the people who have come to deliver their cotton, they have to stand in line for long periods of time to await their turn in many localities. In order to find a solution to this problem, the provincial government has issued a notice regarding the need to handle cotton procurement work more efficiently.

According to the notice, localities with few procurement network outlets are to adopt emergency measures to increase the number of procurement network outlets on a temporary basis, or to send procurement personnel to the villages to arrange for the procurement and shipment of cotton on the spot and to increase the number of procurement, grading and accounting personnel. Additional personnel from the supply and sales cooperatives are to be assigned to such duties, or they may be loaned on a temporary basis from other departments and enterprises, or temporary workers may be hired from the public sector. They must, however, be of a high caliber and are to be selected on their merits. Cotton procurement work is to be organized in such a way that there is a fixed time and location for the procurement of cotton in the various villages and that the cotton may be delivered for sale upon the presentation of certificates so that the full amount may be procured. An effort is to be made to increase the efficiency of procurement work and must be carried on continuously throughout the day. A solution is to be found for the problem of providing food, water and rest for the masses who have come to sell their cotton.

Leadership in cotton procurement work is to be further strengthened. Those in leadership positions are to go to the basic levels to observe cotton procurement work on the spot and to offer prompt solutions to whatever problems that may arise in the work of cotton procurement.

## Procurement Figures

Shijiazhuang HEBEI RIBAO in Chinese 17 Oct 82 p 1

[Text] Large numbers of commune members in the cotton-growing regions, mindful of the interests of the state, are enthusiastically delivering their new cotton crop for sale. The province has already procured 256.9 million jin of ginned cotton, or 51.4 percent of the quota for the whole year and 191.42 million jin over the amount for the same period last year. Recently, the daily amount of cotton procured throughout the province comes to some 12 million jin. After Hengshui and Cangzhou Prefectures and 4 counties completed their assignment, Langfang Prefecture and 14 counties also procured the full quota of cotton for the entire year.

9621

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# SHIJIAZHUANG PREFECTURE COMPLETES WHEAT PLANTING

Shijiazhuang HEBEI RIBAO in Chinese 20 Oct 82 p 1

[Article: "Shijiazhuang Prefecture Completed Wheat Planting in Good Time"]

[Text] Spurred on by the spirit of the 12th CPC National Congress, the majority of cadres and masses in Shijiazhuang Prefecture have, after more than 2 months of arduous battle, completed the planting of wheat in 4.8 million mu of land 10 days earlier than usual. Over 90 percent of the land was planted with wheat in good time and the work was done better than other years.

Shijiazhuang Prefecture is a wheat-producing center in Hebei. The villages in the prefecture regard the proper planting of wheat and record wheat production next year as the best way to implement the spirit of the 12th CPC National Congress. Cadres in the communes, prefectures, and counties divided the work and assigned a part to each individual or group and over 1,000 cadres have been assigned to provide practical guidance and to see to it that each brigade and each village made its full contribution. Technical personnel at various levels, aside from going into the fields to offer on-the-spot guidance, have adopted various means to acquaint the peasants with the scientific aspects of wheat planting. Prior to the wheat planting, 800,000 commune members were trained. Disease resistant species were selected such as Jinfeng No 1 and Pin 39. The seeds were carefully selected and sifted. In order to properly plant the full quota of wheat, 98 percent of the production brigades in the prefecture adopted the joint production contract responsibility system that greatly added to the zeal and enthusiasm of the commune members and the masses. A greater quantity of crude fertilizers, phosphate and nitrate fertilizers were applied than other years. Furthermore, fertilizers were applied in layers to most of the fields, many of the peasant households, aside from making a united effort to collect fertilizers, also used every means to raise funds for the purchase of chemical fertilizers. Despite the abundant seasonal rains and the excellent soil moisture content this year, the various localities set their sights high and took upon themselves the work of irrigating the fields on a day and night emergency basis, to see that the seeds were planted in well-watered fields, to work the land painstakingly, to engage in weeding before and after planting, and to ensure that the planting was done in a proper manner.

At present, the wheat has germinated in over 4 million mu of land in the prefecture. The work of "three inspections," the inspection of sprouts and the supplementary sowing of seeds, the inspection of soil moisture and the inspection and prevention of insects is being carried on in all the counties to ensure the survival of the wheat through the winter.

9621

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## DEVELOPMENT OF RESERVOIR FISH FARMING URGED

Beijing NONGYE JINGJI WENTI [PROBLEMS IN AGRICULTURAL ECONOMICS] in Chinese  
No 10, 23 Oct 82 p 56

[Article by Gong Yuansong [7895 3104 2646]: "Pay Attention to Reservoir Fish Farming"]

[Text] Reservoir fish farming was initiated in Shangrao Prefecture in 1958" it has a 24 year history. However, output is low and economic results are poor, so that the quantity of fish supplied as a commodity to the nation is meagre. For many years, the per unit area yield has fluctuated between 10 and 20 catties. It is a great waste not fully to exploit our fine reservoir resources. The most important reason why reservoir fish breeding has not developed in the past 24 years is the existence of a "small grains" viewpoint in our guiding ideology: food means grain, and "if we don't have enough grain, we can forget about everything else." The focus of attention in developing agriculture has been confined to the 6.3 million mu of arable land. All of our labor power has been tied up in cultivating the land, and a technological system of large labor inputs with low efficiency has been employed. From the period of the first five year plan to the end of the 10 years of domestic disorder, the proportion of the gross output value of fisheries to total agricultural gross output value has fallen from 1.82 to 0.8 percent. Much water surface is unused, and some reservoirs are choked with silt. The water surface for fish breeding has been decreasing constantly, and flood storage capacity has decreased year after year. On some of the water surfaces that are used for breeding there is plenty of fishing going on, but very little breeding. Per unit area output is low, and there is almost no management. Output of aquatic products has greatly declined: per capita output has fallen by about 25 percent since the first five year plan. The contradiction between production and demand is becoming sharper and sharper.

In our actual work, the amount of capital invested in reservoir fish breeding has been too small for many years. Basic construction for reservoir fish farming has been quite inadequate because of the lack of funds, and has been insufficient to meet the demand for high and stable levels of fishery production. There are not enough specialists in pisciculture, and the standards of scientific pisciculture are too low. Policies for the supply of fish food are not working; management of fisheries is weak; and the damage done by pesticides and water pollution is becoming more severe every year: these all have important effects on the development of reservoir fish farming in our prefecture.

Is it possible to develop reservoir fish farming? The Dakengkou Reservoir in Leping County provides us with the answer to this question. Under very poor conditions production has been increased to 102 catties per mu of water surface. If other reservoirs matched Leping the total output of the fish farming reservoirs in our prefecture would reach 300,000 dan. After a period of work on improvements in the production characteristics of presently existing reservoirs, it would be possible to increase gross output to 600,000 dan. If the water surfaces of rivers, lakes, waterways, and ponds were brought into use, a gross output of from 800,000 to 1 million dan could be attained.

Some suggestions for overcoming the backward conditions in fresh water fish breeding in Shangrao Prefecture follow:

(1) Increase the rate of utilization of reservoir water surfaces; step up the development of fish breeding potential. At present only 60 percent of the 319,700 mu of suitable water surface in Shangrao Prefecture is in use. Furthermore, the utilization rate of the water surface in use is too low: in accordance with requirements, each mu of water surface can be used to raise from 150 to 200 fry, but at present each mu is used to raise only a few dozen fry. It is difficult to raise the yield per unit area without an assurance of a fixed number of fry. With regard to the quality of the fry, only one third are up to growth specifications, and two thirds are below specifications. Raising the utilization rate of water surfaces by maintaining norms for the numbers of fry, and supplying many varieties of high quality fry which meet the specifications, are both important measures for stimulating a rapid development of reservoir fish farming.

(2) Strengthen management and controls; raise the standards of scientific pisciculture. The experiences of some of the advanced units in our prefecture shows that it is necessary to set up specialized contingents for reservoir fish farming, and to use the production responsibility system. The management and control system of "four fixes, three guarantees, one bonus" should be employed. (Fixed personnel, fixed assignments, fixed schedules, fixed output value; guaranteed expenses and costs, guaranteed profits, guaranteed fresh fish for marketing; unified bonuses and penalties. After the fulfillment of production, output value, and profit responsibilities, bonuses are set at 60 percent of the amount in excess of quota. Penalties are set at 40 percent of the amount of any shortfall.) Tasks should be well-understood and responsibilities clear: the man who raises the fish does the worrying. All the units which have put into practice this kind of responsibility system have brought into play the enthusiasm of staff members and workers for fish breeding, the joy of the masses, the satisfaction of the cadres, and the happiness of the contracting units.

The first problems to be settled with respect to scientific fish breeding are those concerning the growth specifications and the varieties of fry to be raised. To achieve self-sufficiency in spawning, raising, and harvesting, it is necessary that enough winter fry be spawned to supply the reservoirs and ponds. The fry should meet specifications of from 3 to 4 cun, and the proportions of spotted carp, silver carp, grass carp, common carp, etc., should be suited to local conditions. A proper combination of fish foods should be used.

The next problems to be solved concern scientific raising and the prevention of fish diseases. The acceleration of industrial and mining construction in recent years has resulted in increased dangers from pesticides and water pollution. Tailrot and dropsy have become quite prevalent and have had serious effects on fish production. While doing a good job on environmental protection, we must establish and strengthen departments for the prevention and treatment of diseases in fishery production, assign specialists, and curb outbreaks and the spreading of diseases in good time.

With regard to the protection of aquatic resources, it is necessary to conscientiously apply the fisheries laws, to formulate local ordinances and popular compacts to forestall such phenomena as the stealing, poisoning, and plundering of fish. Fish farming prefectures must be strict in registering operations to prevent harm to fish and overharvesting.

(3) Use financial resources to promote the development of reservoir fish farming. Investment in reservoir fish farming has been cut back in recent years. Because of inadequate funds the development of fishery production at those reservoirs which need assistance has been relatively slow. I suggest that in the future a certain sum be allocated from water conservancy construction funds and local financial surpluses to assist those prefectures that have a large amount of fish farming water surface and production, for the purpose of providing the necessary capital to improve the conditions of production in reservoir fish farming.

(4) Strengthen scientific research and nurture specialized talent. The progress of reservoir fishery production depends on our policies and our science. At present, there is a severe shortage of specialists in reservoir fish farming. In the nurturing of fishery cadres we ought to increase our investment in brain power, operate training classes for fishery cadres, use many channels to cultivate talent, and supply the skills needed to get to the heart of things. Topics for scientific research which are closely related to reservoir fish farming--such as fish feed, improvement of stocks, the use of mesh boxes, disease prevention, improvement of the harvesting gear, etc.--should become the important topics of scientific research into aquaculture in our prefecture. We should organize our strengths, concentrate our funds, achieve results as quickly as possible, and promote the development of reservoir fishery production.

12187

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PROGRESS IN WATER, SOIL CONSERVATION REPORTED

Beijing NONGYE JINGJI WENTI [PROBLEMS IN AGRICULTURAL ECONOMICS] in Chinese  
No 10, 23 Oct 82 pp x-33-x 35

[Article by Yu Zheng [0151 6927] Gao Jisheng [7559 4949 3932], Li Houxi  
[2621 0186 0823], Guo Zhixian [6751 1807 6343]]

[text] In August and September of last year, the authors carried out a survey of the situation of water and soil conservation in Northern Shaanxi and visited 19 commune-brigades of the 9 counties of Ansai, Yanan, Zichang, Qingjian, Suide, Zizhou, Jingbian, Huangshan, and Mizhi, as well as the Water, Soil Conservation Experimental District of Chafang of Ansai County, and the Mizhi County Water and Soil Conservation Experimental Station.

Following the formation of the plans for gradual construction of the loessial plateau into a base of animal husbandry and forestry and the policy of construction of agricultural production in northern Shaanxi, water and soil conservation in northern Shaanxi has been even more closely integrated with agricultural production. Agricultural production has water and soil conservation as the foundation and water and soil conservation serves agricultural production. This has become the general trend of agricultural production development in northern Shaanxi.

I. In the Process of Implementing the Policy of Constructing Agricultural Production, Northern Shaanxi Walks the Road of Simultaneous Development of Agriculture, Forestry, and Animal Husbandry.

In northern Shaanxi, agricultural production had always been single-minded concentration on grain production, and water and soil conservation had also been carried out for the purpose of grain production. That is to say that attention was given to engineering measures only. Consequently, the problem of grain was not satisfactorily resolved while forestry and animal husbandry were not well developed either. A few production teams with much land but a scanty population summarized historical experience and started off from individual local conditions before measures were resolutely adopted to retire cropland and turn it to forests and meadows to produce delightful results. Angou Brigade of Dingxianyan Commune, Suide County began in 1979 to retire 1,400 mu of cropland to cultivate forage under the condition of maintaining a



satisfactory cropping of 3 mu per person. On steep slopes of gullies and ravines, a large quantity of eucalyptus saplings were also planted. In that year, the total grain production reached 390,000 jin, an increase of 120,000 jin over that of 1978. In 1980, the production rose again to 440,000 jin. Sheep were increased from 300-plus heads to 700-plus heads. Wherever the authors visited, they discovered many production teams like this. This goes to show that it is possible to develop grain production in a big way and at the same time forestry and animal husbandry production can also be developed to produce good results.

II. Break Down the Old Convention by not Pursuing Engineering Measures Singularly and not Pursuing Biological Measures Singularly Either but Combining the Two Closely To Develop in the Direction of Multiple Operations of Agriculture, Forestry, Animal Husbandry, Auxiliary Industry, and Fishery.

Maojiahe Brigade of Zichang County had been a hardship brigade with not enough food or money before 1976. After the Third Plenary Session of the 11th Party Congress, while not relaxing grain production, every mountain and every hollow, from the top to the bottom, have all been planted with trees and grass to cultivate mulberries and raise silkworms for diversified operation. The appearance of the area has changed greatly. Aside from a definite quantity of basic cropland per person, 3,400 mu were set aside for afforestation (of these, 590 mu were designated for mulberries) and 2,300 mu for grassland. In 1980, the total grain production reached as high as 450,000 jin, 67 percent higher than the average annual production of 270,000 jin since collectivization, with an [additional] income of 45,000 yuan from multiple operations. In the past 2 years, the commune members constructed 142 new brick kilns, nearly 1 kiln per household. Their conclusion is that the way to riches is concurrent development of agriculture, forestry, animal husbandry, and auxiliary industry to pursue diversification in a capable manner. Whatever will show results sooner should be tackled first (showing results in the same year or within 1 to 2 years.) The profit should be high; the capital investment should be low; and the project should be conveniently handled by one family or one household. This is a breakthrough in terms of content and benefit of water and soil conservation. Only when this idea is firmly grasped, can water and soil conservation be further and faster developed.

III. It is Amazing How When a Small drainage Basin is Comprehensively, Concentratedly, and Contiguously Brought Under Control, the Benefit is the Greatest.

Hongqigou of Qingjian County is a good example of what we saw in terms of persistently taking care of a small drainage basin. The Hongqigou stream valley measures a total of 62.3 km<sup>2</sup>. After the persistent, comprehensive, concentrated, and contiguous control of the recent decade, the forest acreage of the area has reached 20,000 mu, more than 4 mu per person, and the coverage has reached 21.5 percent; 201 dikes were constructed to create 5,844 mu of cropland; 7,023 mu of grass were planted. The total area thus treated reached 24.9 km<sup>2</sup>, amounting to 40 percent of the total area of the stream valley. Within this area, water and soil erosion is basically brought

under control. The water does not come down the mountains and the soil does not leak over the dike. Although the acreage of cropland is reduced from the 28,000 mu of 1972 to 23,000 mu, the total grain production has risen from the 2,489,000 jin to the 4,253,000 jin of last year, amounting to 903 jin per person. The agricultural economy has also realized an overall development of agriculture, forestry, and animal husbandry from the original singular pursuit, to produce products worth 178.8 yuan per person, an increase of 95.3 percent over 1972. Beginning in 1972, in Mushigou stream valley, a silt blocking flood detention dam was built in the upper reaches of the main channel and in 1974 a reservoir was constructed in the lower reaches. The upper dam holds back the silt and the lower dam stores water for irrigation. In this manner, a total of 120 dams were constructed in all the branches of the stream valley to create 23,000 mu of cropland, 15,000 mu of forests, 15,000 mu of grassland to control an area of 35.8 km<sup>2</sup>, 47 percent of the 79 km<sup>2</sup> area of the drainage basin inside the county. The benefit of reducing mud and sand runoff is obvious. Judging from the prolonged useful life of the reservoir, it is estimated that the usefulness may be extended from the original 10 years to about 40 years. From this example, it may be said that comprehensive treatment of small stream valleys is indeed an effective method of controlling water and soil losses. The method is worthy of recommendation and persistent pursuit.

#### IV. A Very Important New Characteristic of Current Water and Soil Conservation [Policy] Is Using Grass Planting as the Breakthrough Point to Accelerate Erosion Control and Hasten Grain Production and Comprehensive Development of Agriculture, Forestry, and Animal Husbandry.

The authors saw many communes and brigades reap great benefits from planting forage. Dunju Brigade of Tawan Commune, Huangshan County has 120 households with a total of more than 500 persons. In the past, it was a poverty ridden place tucked among barren mountains; there was little food or clothing. The county began to distribute grass seeds in 1979 and ask the people to plant grass. At first, they hesitated and reluctantly planted some grass in some waste and fallow lands on the slopes of ravines, the side of roads, and the banks of canals. But, they saw the benefit in the first year; therefore, they decided to plant grass in a big way. In the past 3 years, the brigade planted 5,500 mu of grass, averaging more than 10 mu per person. The 3,000 mu in Shadawang brought in about 30,000 yuan of income in 2 years from grass seeds alone. There were 1,000 mu in Shadawang capable of producing seeds last year. At 40 jin per mu of seeds, there may be a harvest of 40,000 jin, worth 60,000 to 80,000 yuan. This income alone has brought wealth to the entire brigade. The availability of grass promoted fast development of animal husbandry. The 1,300 heads of sheep of 1980 have increased to 1,800 heads in 1981. Large animals were increased from 88 heads to 120 heads. The grass was dried into more than 400,000 jin of hay. After guaranteeing the feed for the existing herds of domestic animals, there is a surplus of 150,000 jin. With the development of animal husbandry, agriculture is provided with excellent organic fertilizer to promote increased production of grains. The total grain production of 1980 was 40 percent higher than that of 1978 and the amount of grain purchased and delivered to the state doubled to increase the income of the masses. Each day of labor amounted to 1.1 yuan and the

food grain per person was more than 520 jin. Every household had surplus grain and 70 percent of the households had bank deposits. This is indeed "tall grass, abundant grains, and six types of prosperous animals." The masses are delighted, saying "if [you] want to be rich, plant the grass, graze the animals, and plant the trees."

The Dingxianyan Commune of Suide County began to rotate forage with crops to combine land utilization with land nurturing, to increase soil organic matter and nutrients, to improve the water and fertility preserving capacity of the soil, and to cause continuous yield increase of grain. Since 1974, that commune has insisted on raising grass every year to reach 5,600-plus mu of it in 1980, while the total grain production doubled. According to the survey taken by Suide County Center of Agricultural Sciences in that commune, after 2 years of growth of *Astragalus melilogoides*, the soil organic matter increases 24-56 percent, the equivalent of an increase of nitrogen contained in 118 jin of ammonium sulfate. The enlargement of forage acreage promoted the development of animal husbandry. Sheep increased from the original 5,600 heads to more than 10,000 heads. The forage-cropland rotation system resolved the contradiction of densely populated mountainous regions with poor soil and a short supply of fertilizers and the contradiction of developing animal husbandry and no grass. The system produced the result by "retreating one step to advance two steps."

The experiences of Dunju Brigade and Dingxianyan Commune proved that it is feasible to use planting grass as a breakthrough point. The development of forage, benefits everything. It results in agriculture, forestry, animal husbandry, and auxiliary industries turning in the direction of mutual promotion to create a favorable cycle of more grass, more animals, more fertilizer, more grains, and more money, confirming the scientific principle of development. An effective method of fast, low cost, and easy to extend treatment of the loessial plateau has been developed so that the authors see hope of quickly changing the appearance of the loessial plateau.

V. Attention Begins To Be Given to Combine Scientific Research Work of Water and Soil Conservation With the Work of Control and Treatment and the Comprehensive Development of Agriculture, forestry, and Animal Husbandry To Produce a Group of New Results.

In recent years, the Northwest Research Institute of Water and Soil Conservation Chinese Academy of Sciences organized scientific researchers to carry out an overall survey in the Ansai County Chafang Water and Soil Conservation Experimental District and formulated a comprehensive control and treatment scheme for the experimental district. Based upon this scheme, 10 research items were organized to accelerate the progress of scientific research and control. The Mizhi County Water and Soil Conservation Experimental Station of the Provincial Academy of Agriculture and Forestry combined scientific experimentation with comprehensive control from the very beginning. In Mizhi County experimental points of afforestation and grassland construction were established at Quanjiagou and Gaojiagou for research as well as for treatment. For the benefit of the masses, they also helped to launch programs of raising leghorn chickens, plush furry rabbits,

fine-wool sheep, etc., to develop diversification. The masses reaped benefits in the 1st year and liked the programs very much. Scientists of the Provincial Research Institute of Mulberry and Silkworm carried out experiments in Maojiahe Brigade of Zichang County to search out some experiences of the mulberry and silkworm culture suitable for the local conditions. They also organized training classes to produce a large group of technical cadres.

The Northwest Research Institute of Water and Soil Conservation carried out an experiment of transitional terraced fields in Chafang of Ansai County. On the slopes, grass and shrubs were planted, trees which produce cash crops were cultivated on the terraced fields. During the sapling stage, the trees were intercropped with agricultural crops and on the terrace embankments, melons were planted. This scheme produced an income of 60-70 yuan per mu in the 1st year while the goal of water and soil conservation was also accomplished. For the purpose of reasonable utilization of land, they created the condition for retiring cropland and turning it to forestry and animal husbandry. They also studied and found a set of technical and economic indices for the use of machines to construct terraced fields and methods of production management that are highly efficient but low in cost to provide some scientific bases for future large-scale extension of constructing terraced fields with machines. The Provincial Bureau of Water and Soil Conservation used locust trees to afforest the barren mountain slopes in Hongqigou in Qingjian County and experienced planting in 1 year and producing a forest in 2 years. This experience has practical significance in northern Shaanxi. Yanan City extended the "two-methods" of cropping the land (that is cropping in horizontal [contour] trenches in the mountainous lands, cultivating in furrows on flatlands, coordinated with other measures) to improve the condition of moisture and fertility on the slope of the land to produce a general yield increase of about 50 percent, more than doubling it in some places. The water and soil conservation cropping method was quickly extended. In these years, the "two-methods" of cropping has been developed to 2 million-plus mu of cropland and has had an important function in resolving the grain [shortage] problem.

VI. The leaders on the county level emphasized the water and soil conservation work. They recognized that it is important to depend upon policy and science in order to develop agricultural production. In northern Shaanxi, to depend upon science means to do water and soil conservation work well. When water and soil conservation is grasped, it means the affair is handled according to natural and scientific principles. Those in charge of Ansai County communicated personally with scientific researchers and took care of planning personally. They personally carried out scientific research, established the Chafang Water and Soil Conservation Experimental District and the Work Stations and assigned technicians. They studied with the scientific researchers of the Northwest Research Institute of Water and Soil Conservation and carried out treatment and control work with them. The committee secretary of Qingjian County regarded the Hongqigou Valley as his own test point to tackle organization, planning, and treatment work directly.

During the survey, the authors also discovered some problems. Generally speaking, some preliminary results are already observable in places [here and

there] but area-wise, the efforts are not great enough. There is not enough unity of places and areas.

Since the production responsibility system has been in practice, the farming masses have become much more positive and an unprecedented good situation has appeared in agricultural production, to provide a very favorable condition for water and soil conservation work. Under such a new situation, water and soil conservation in northern Shaanxi should proceed faster and the conditions for it to advance faster are present.

6248

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ESTIMATE, PROJECTION OF 1982 FLOOD CONDITION DISCUSSED

Jinan NONGYE ZHISHI [AGRICULTURAL KNOWLEDGE] in Chinese, No 12, 20 Jun 82  
p 4

[Article by the Office of the Provincial Drought Resistance and Flood Prevention Command Headquarters: "Analysis and Estimation of This Year's Flood Condition"]

[Text] According to forecasts and analysis by various sectors, rainfall during the flooding period in our province this year will show a substantial increase over last year. There is the possibility that flooding and damage may occur in certain regions.

The national meteorological conference has approved the analysis of the patterns of drought and flooding over the past 500 years and astronomical changes, especially the study of the influence of sunspot activity upon atmospheric circulation. It believes the arid weather in the North China region will ease in the future and rainfall will gradually increase. The amount of rainfall in 1982 showed an increase over 1981. The forecasts of the Central Meteorological Station from May to August of this year show that the trend of total rainfall throughout the nation is toward more rain during the same period last year over the eastern part and most of the southwestern regions. It is expected that this summer, the amount of rainfall over most of the regions of the lower reaches of the Changjiang will be 10 to 30 percent more than the same period in ordinary years. The amount of rainfall over most of Jiangsu and Anhui, southwest Shandong and the northwestern part of Henan will increase 20 to 50 percent, and floods may occur in some regions during the peak summer season.

Last winter, the provincial meteorological department forecast that from June to August of this year, rainfall in southern Shandong will be about 600 millimeters, 10 to 20 percent more than normal years. In July and August, internal waterlogging may occur in some areas. In August, rainfall throughout the province amounted to between 180 and 250 millimeters, 30 to 40 percent more than normal years. Analysis by such units as the North Sea Fleet of the People's Liberation Army, the Shandong Oceanographic Academy, the Qingdao and Yantai Meteorological stations shows that the dry season in the Jiaodong peninsula area has ended. Rainfall began to increase this year. From June to August, the amount of rainfall was over 450 millimeters, an increase of more than twofold over last year.

Analysis by the provincial hydrological department based on the general pattern of the change of rainfall during the flooding season predicts that from June to September of this year, the amount of rainfall throughout the province may reach between 470 and 510 millimeters. A year of abundant water may occur in the three regions in northern Shandong.

Analysis based on historical data compiled by the Yellow River Water Conservancy Department indicates that the Yellow River also shows a pattern of alternation between a period of abundant water and a dry period. After the major flood in 1958, the Yellow River underwent 100 lengthy dry periods. Beginning from last year, the amount of water during the flooding season has visibly become more abundant. The total amount of waterflow at Huayuankou reached over 36 billion cubic meters, 24 percent more than normal years. It is estimated that the Yellow River may be entering a period of abundant water.

In addition, analysis based on the geographical position and the meteorological characteristics of our nation shows a very great possibility of a big flood during the flooding period. Also, the less rain there is in winter and spring, the more chances there are for flooding and waterlogging to occur in summer. Since the founding of the nation, there have been 16 years in which rainfall was less than normal years in winter and spring, and in 11 of them, flood damage was serious during the flooding period. At the same time, because our province is along the coast, there are more chances of being influenced by typhoons and especially large torrential rains may occur any time in some areas. Analysis of the patterns of evolution of drought and floods in our province shows that after a major drought, a major flood frequently occurs. During the past 500 years, major flood damage in our province has generally occurred once every 7 to 8 years, and frequently, drought and floods continue alternately. Sometimes, severe drought occurs during one year and a sudden major flood occurs in the next. For example, there was less rain continuously for 7 years or 6 years over the Liaocheng Prefecture from 1954 to 1960, and from 1965 to 1970. But in 1961 and 1971, the amount of rain suddenly increased and it caused 2 years of major floods since the founding of the nation. Sometimes, even when the average amount of rainfall throughout the province is not large, local floods still frequently occur.

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## PROBLEMS OF WHEAT PRODUCTION IN SHANXI DISCUSSED

Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 9, 20 Sep 82 pp 2-4

[Article by Liang Tongfang [2733 2717 5364] and Guo Mingyi [6753 2494 5030] of the Agricultural Department of Shanxi Province: "An Analysis of the Wheat Production Situation in Our Province"]

[Text] I. The situation and characteristics of wheat production in the province in 1982:

According to initial estimates, this year the province's total wheat output may amount to more than 3.4 billion jin, an increase over last year and the fourth highest annual total output since the nation's founding. Only rarely has output increased two consecutive years in our province. In 1975 and 1976 total output amounted to more than 3 billion jin each year. In 1981 and 1982 there was an increase in output and total output amounted to more than 3 billion jin each year, but those output figures were attained under the condition of the planted area having declined by 3 million mu, which is an experience worthy of earnest recapitulation. This year the province's average per-mu yield was about 260 jin, the highest annual per unit area yield ever.

The basic characteristics of wheat production this year were: First, the principal concentrated wheat-producing areas in the southern part of the province increased output on a large scale. Last year Yuncheng Prefecture's wheat output was 1.69 billion jin, but this year its total output may reach more than 1.77 billion jin, the highest level in history. Linfen Prefecture last year had a total output of 660 million jin, but this year it amounted to 820 million jin, an increase of 24 percent. In a considerable number of counties the total wheat output equalled or surpassed the highest level in history. Ruicheng County had a wheat area of 490,000 mu and a total output of 170 million jin, an increase of 66 percent over last year. Xiangfen County had a wheat area of 570,000 mu and a total output of 202 million jin, an increase of 35 percent over 1981. Second, because of the establishment and perfection of the system of responsibility in agricultural production, there appeared many typical model contracting households and production brigades that have high output per mu. The land contracted by Zhai Fangxin, a member of the Yangfeng Production Brigade in Ruicheng County, consisted



of 1.2 mu of nonirrigated farmland and ridges, but he had a total output of 1,449 jin and a yield of 1,208 jin per mu; a record high dryland wheat yield per unit. Donglu in Wenxi County, Songguo in Houma County, Beiguan in Xinjiang County, and Zhucun in Qixian County all have for many years had a stable yield level of about 800 jin. Third, each locality has, with regard to wheat production, focused tackling on nonirrigated land, mostly middle- or low-yield fields, and achieved definite success. This year, in each locality there generally was a large output increase on nonirrigated land, and on middle- and low-yield fields. The Xizhuang Production Brigade in Hongdong County had 1,600 mu of hilly, dryland wheat and a total output of 610,000 jin, 4.5 times more than last year. Hejin County's Youbo Production Brigade had 2,780 mu of wheat, only 12 mu of which were water surface, and a total output of 1.07 million jin, an increase of 60 percent over last year. The Beizhuang Commune in Ruicheng had 40,000 mu of wheat, 90 percent of which were dryland wheat fields, and an output of 1.448 million jin, doubled its output last year. In the past there were seldom large-scale output increases on dryland wheat.

## II. The principal reasons why wheat production in our province increased in two consecutive years:

Our province was able to have stable, increased wheat output 2 years in a row principally because of policies which correspond to popular feelings, the bringing into play of the role of science and technology, and relatively favorable weather.

1. The system of production responsibility has had a great effect. For two consecutive years the establishment and perfection of the system of agricultural production responsibility has fully mobilized the positiveness of the broad commune member masses. That has been a basic guarantee for the attainment of stable wheat yields. Xu Ziyou, a member of the Beizhuang Production Brigade in Ruicheng County, who contracted 40 mu of wheat, exchanged a bicycle and a sewing machine for top-quality seeds and chemical fertilizer. The members of the Lilin Production Brigade in Quwo County, which had 2,800 mu of wheat, invested a total of 50,000 yuan--an average of 20 yuan per mu--to buy chemical fertilizer. According to reports from the various areas, this year all agricultural activities regarding wheat production--from soil preparation, planting, sowing, and winter-spring management to harvesting and husking--were carried out in a careful and timely manner, which was rarely the case in the past.

2. Weather conditions were relatively favorable. According to an analysis of meteorological data, for 2 consecutive years the province has had bumper harvests principally because the preplanting soil moisture and the rainfall during the initial growth and stem elongation stages were relatively plentiful and timely; especially in the concentrated wheat-growing areas in the southern part of the province, the soil moisture was better than in most years. During the greening and elongation stages, although the rainfall was not abundant, it was relatively concentrated and timely, and during the heading and flowering stages the temperature was suitable and there were no overcast skies or rain. During the ripening period the dry

hot wind arrived late and were mild in degree. All of these things were relatively beneficial for the normal growth and development of wheat. The unbeneficial aspect is that the slight rainfall and drought throughout the growth period exerted a great influence. In the central basin and north-western mountain area that was especially evident. During the period of overwintering, wheat encountered early frost, early freeze, and low temperatures, and the cumulative temperature was small. That was extraordinarily disadvantageous for the tillering and root development of wheat. Last year, in October and the first 10 days of November, the time when wheat tillers, the temperature was 3° to 5° Centigrade lower than usual. In addition, the temperature during the previous years had been continuously low. During the past winter the cumulative temperature above 0°C was 100° to 150°C less than usual and was 130° to 200°C less than last year. As a result, the tillering stage ended 10 to 15 days earlier than in previous years. In Yuncheng County, during the past winter the cumulative temperature declined by 176.3°C in comparison to last year. In Jiaocheng County the decline was 171.2°C. Since one tillering requires a cumulative temperature of 80°C, that means a reduction of two or more tillerings. Low temperature and insufficient cumulative temperature were the principal reasons why this year's wheat before winter tillered little, the total number of stalks was small, there was little root development, and the weak seedling area was large. After the wheat overwintering the temperature rose considerably. In Yuncheng County, between December of last year and the end of February of this year the cumulative temperature increased by 123°C over the same period last year and was 176°C greater than the average of the 30 years since the liberation. That essentially made up for the insufficient cumulative temperature during the past winter. During the middle 10 days of February there was general rain throughout the province and during the middle 10 days of March there was rain limited to the southern part. That was extremely beneficial with regard to the greening and growth of wheat and accelerated the spring tillering. The transformation of the wheat seedlings was very rapid, tillering increased, colonies became larger, and the spike forming rate increased. In the meantime, the periods the wheat was in milk varied greatly, which benefited the milk stage by speeding up its rate and advancing the time. In the southern part of the province, although the number of wheat spikes per mu was small, the ratio of kernels that weight heavy was relatively high. In the central part of the province, because of the prolonged drought the number of wheat spikes per mu was small, the milk process was weak, and the ratio of kernel weight was not high. In some places output reduced in comparison to last year.

3. The distribution of wheat and crop rotation, in the course of 2 years of readjustment, have begun to follow a rational trend. After the 1980 provincial science and technology conference on wheat summarizing the experience, each locality for 2 consecutive years did a good job of carrying out the task of readjusting the distribution and rotation of wheat, had land utilization plans and replanting indexes, shortened the late wheat crop period, and expanded the stubble wheat fields. In Ruicheng, Xiangfen, and all other counties which increased output on a large scale, the main wheat planting area was maintained at about 70 percent, in order to rationally rotate crops, use the conditions created by using the land to maintain the land, and plant in a timely manner.

4. Traditional experience was brought into play and output-increasing measures were accurately grasped and applied. With regard to resisting drought, the wheat fields were deep-plowed at an early date, and in the province as a whole the deep-plowed wheat area amounted to 99 percent of the fallow fields, which enabled the dryland wheat fields to effectively retain soil moisture and resist spring drought. Ammonium carbonate applied as base fertilizer, the application of a large amount of a mixture of phosphate fertilizer and nitrogen-phosphate fertilizer, and the application of one dressing of sufficient base fertilizer on nonirrigated farmland played a great role in increasing output. Especially, the output-increasing effect of phosphate fertilizer, which promotes the development of robust wheat stalks, the increasing of the number and weight of grains, the acceleration of the milking process, the resisting of drought, and the resisting of dry, hot winds, is already known by the broad masses. In addition to the application of a nitrogen-phosphate mixture as base fertilizer, this year the province's areas during the wheat flowering and milk-producing stages, which were sprayed with phosphate fertilizer amounted to 1.5 million mu, of which 310,000 mu were fertilized by airplane. This year, in some localities and units the wheat output was either the same as or somewhat less than last year's, principally because sowing and planting was slow and late and the planting period was stretched out too long. Furthermore, last year there was early frost and early freeze, and the cumulative temperature was small, which affected proper tillering, the colonies were small, and the number of spikes per mu was small. The common experience of all places is move up the planting by 5 to 7 days, during the proper wheat planting period, and the seedlings cultivated before the winter will be healthy.

5. The role of agricultural science and technology has become increasingly great. In the new situation, the broad peasant masses' requirement with regard to agricultural science and technology are urgent. In each area the agricultural technicians signing contracts with the production brigades and contracting households, and relying on households skilled in agricultural science to bring along the other households in carrying out scientific farming activities, have played a very big role in wheat production.

III. The principal remaining problems and production-increasing measures in our province's wheat-producing areas:

The types and output levels of the wheat-growing areas in our province are, in general: Each year about 14.5 million mu are planted in wheat, of which winter wheat accounts for 13.8 million mu and spring wheat accounts for 700,000 mu. More than 5 million mu are irrigated land (of which about 3 million mu are capable of being irrigated three or four times). Dryland wheat fields amount to more than 9 million mu, about 70 percent of the total wheat fields. Of the 9 million mu of dryland wheat fields, more than 5 million mu is flat ground, about 4 million mu hilly and sloping land. Yield levels: on irrigation ensured fields, more than 500 jin; on irrigation expanded fields, about 300 jin; on good nonirrigated land, more than 200 jin; on the nonirrigated land in general, about 150 jin; and on sloping, hilly land, about 100 jin.

According to administrative divisions, the province has six wheat-growing areas: Yincheng Prefecture, Linfen Prefecture, Jinzhong Prefecture, Luliang Prefecture, Jindongnan Prefecture-Xinxian Prefecture, and Yanbei Prefecture. From the point of view of wheat production, the principal longstanding common problems have been drought, infertile soil, careless plowing and planting, and a lack of drought-resistant varieties. Specifically, however, the principal problems of each production area differ. In Yuncheng Prefecture, which has a cultivated area of 5.35 million mu, the principal problems are a falling water level, a serious shortage of water resources, high irrigation costs, and inability to ensure irrigation. In addition, the irrigation ditches and their anti-seepage system, and the cropland surface construction works in the area irrigated by the Yellow River do not match. As a result, it uses a large quantity of water, and the quality of the irrigated land is not high. Furthermore, the "use the land to nourish the land" crop rotation system has not yet been firmly established, and the soil fertility has not kept pace. In Linfen Prefecture, which cultivates 3.3 million mu, the principal problems are that the old irrigated area has two wheat crops a year, the crop rotation area is large, extensive cultivation is practiced, and the planting period tends to be tardy. The non-irrigated land is plowed and harrowed late in summer so the retention of moisture is less effective. There is serious soil erosion in sloping hill land, soil fertility is poor, and the summer Yellow River irrigation system has not yet been completely established. In Jinzhong Prefecture, which has a cultivated area of 1.3 million mu, the principal problems are that the area irrigated by the Fen River continues to use the flood, slow-irrigation system, which is irrational and unscientific. In the hilly areas there is serious soil erosion, the soil is dry and infertile, a considerable number of localities still bunch-plant by hand, fewer spikes are formed, and yields are low. In Jindongnan Prefecture, which has a wheat area of 1.75 million mu, the principal problems are that the north-central reservoir area historically does not irrigate wheat with water and has not yet fully overcome this problem. The southern part of the province has the practice of growing two crops a year on both wet land and dry land, has a high replanting index, and cannot guarantee the use of liquid fertilizer. In Xinxian and Yanbei Prefectures, which have a wheat area of 9 million mu, the principal problems are that many spring wheat varieties mostly are planted on dry land, extensive cultivation is practiced, and yet per mu yields do not exceed 100 jin. On dry hilly land, wheat is essentially, from planting to harvest, a chancy proposition. Rotten and diseased roots do serious damage and output suffers big losses.

The principal problems of each production area have not been thoroughly analyzed and accurately understood. Each locality must, on the basis of the actual situation, carry out zoning and classifying, zero in on tackling the main problems and adopt measures to solve these problems accordingly.

1. It is necessary to continue to do a good job of stabilizing and perfecting the system of production responsibility. In the immediate future, the crucial matter is doing a good job of resolving the relationship between "contracting" and "centralizing," and combining the enthusiasm of the individual commune members with the superiority of the collective economy.

In the province's system of wheat production responsibility, 80 to 90 percent of the units have carried out double contracts system. That form of responsibility system is supported by the masses; they will do a good job and feel very enthusiastic. But there are a considerable number of households which lack labor and capital, do not understand science and technology, and still encounter certain difficulties in scientific farming. It is necessary to, by way of training, teaching and guidance by households skilled in science and technology, etc., raise their scientific farming level and help them resolve actual difficulties.

2. It is necessary to do a good job of summer-plowing fallow wheat fields so that it can hold moisture, and of harrowing to retain moisture, in order to use the summer rain in spring. That is an effective cultivation measure for fighting drought on a large area of dry land. In summer deep plowing, it is necessary to plow early and harrow immediately after plowing, and to harrow when there is rainfall, in order to seal in and maintain the soil moisture. But some localities are slow in starting to work and still observe the old custom of harrowing during the Autumn Equinox solar term. They should change from Autumn Equinox harrowing to after-plowing harrowing in order to retain soil moisture to the maximum possible extent and to timely sow and plant in order to ensure full seedlings and lay a good foundation.

3. In flood-prone mountainside areas, it is necessary to fully utilize the beneficial conditions created by the torrents of water rushing down the mountains after the summer rain by using flood to irrigate the wheat fields. Such localities have historically had the experience of "using flood to irrigate the fields and attaining high wheat yields." During the past several years, because the fields and the irrigation ditches were in bad repair, the irrigated area by flood water has not been large and the flood water has flowed away unused. After the implementation of the system of production responsibility, the masses restored the traditional practice of flood-irrigating the fields. In the province as a whole there are already millions of mu of wheat fields that can be flood-irrigated. In the hot summer months it is possible to irrigate the fields once by flood water and ensure in the following year 400 to 500 jin of wheat output per mu. It is necessary to bring into play this superior condition and do a good job of organizing the irrigation of wheat fields.

4. Increase the application of fertilizer, build up soil fertility, apply mixed nitrogen-phosphate fertilizer, and apply fertilizer rationally. It is necessary to, in view of the actual circumstance of two successive bumper wheat harvests having considerably reduced the fertility of the soil, create additional sources of fertilizer, grow and gland pack green manure, cutting straws and weeds to cause decomposed as fertilizer, accumulate compost from the various kinds of peasant household fertilizers, promote the application of mixed nitrogen-phosphate fertilizer, and go all out to apply sufficient base fertilizer. It is necessary to apply an adequate amount of fertilizer on the basis of the need of soil fertility and the output. It is also necessary to correct the unscientific approach that yields can be increased by merely applying chemical fertilizer. Since dryland wheat

fields are limited in how much water they can take, it is necessary to promote the method of spreading sufficient chemical fertilizer in one application. Since the quantity of phosphate fertilizer produced is small but a large quantity is in demand, the wheat fields that have been applied phosphate fertilizer in past years should not be applied again this year. We should apply phosphate fertilizer as much as possible on the medium- and low-yield wheat fields. Chicken and rabbit manure, cottonseed cake, rapeseed cake, plant ash, etc., are fertilizers with relatively high phosphate content which should be collected and used in order to make up for the phosphate fertilizer insufficiency.

5. It is necessary to maintain the practice of high-quality and high volume sowing and planting at the proper time. All of the stubble wheat fields can be sown and planted at the right time. The principal question involves the repeated cropping of wheat. The reason that this year's wheat production declined in some localities was precisely because the autumn frost came early last year and the preceding crop matured late, thus delaying the planting period for the succeeding crop. The key to resolve the problem of timely sowing and planting late wheat lies in resolving the conflict of competing for time between the wheat crop and the autumn grain crops by promoting early maturing of the autumn crops, so that the land can be cleared early. Other solutions include: 1) Promote ridge interplanting of wheat and corn, dibble plant the corn 2 weeks before the wheat is ripe--the corn can be harvested 15 to 20 days early. 2) Promote the transplanting of corn. The corn seedlings should be grown 20 or more days in advance and transplanted after the wheat is harvested. This way, corn can mature 20 or more days earlier. 3) Select and use early-maturing varieties, plant as early as possible within the proper planting period, cultivate strong seedlings before winter and, by means of seedling management, advance the spike maturization rate and increase production.

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